### Proposed Changes in Patent Laws.

MESSRS. EDITORS;—I have been reading your comments upon Messrs. Taylor & Chaffee's Patent bill and I most heartily concur in all your views. It would be a gross outrage upon inventors to pass such a bill. Would it not be well for you to suggest in your paper that all inventors should write to members of Congress from their districts, to oppose the bill? I have already written to ours.

G. W. HILDRETH.

Lockport, N. Y., February 2, 1858.

[Capt. R. B. Forbes, of Boston, a veteran in scientific and mechanical subjects, writes: "I have read carefully your remarks on the proposed changes in the patent law, and I hope the subject will continue to be discussed, for it is apparent to me that great injustice will be done if this law goes into effect."

There are a great many intelligent men who view this attempt of Messrs. Taylor & Chaffee, to modify the Patent system as a complicated abortion—in fact, we have not heard a solitary approval of it.

The suggestion of Mr. Hildreth, that inventors should write to members of Congress from their district, to oppose not only this but some other notorious schemes, is a good one. Hitherto this class of our citizens have remained in the back ground in this particular, and it is well for them to indulge a little in the benefits of the franking privilege which members of Congress enjoy, and enter solemn protests against such evil attempts at legislation.

A patent bill has been presented to the Senate by Mr. Evans, of South Carolina, which we feel assured will meet the concurrence of inventors generally. We are advised that it proposes simple reforms, such as are really needed to render our Patent system a model of simplicity and wisdom.

### The Cold Deep Sea.

MESSRS. EDITORS—I noticed on page 150, this volume of the SCIENTIFIC AMERICAN, an article under the head of "Earth and Ocean Temperatures," in which it is stated that Lieut. Berryman, U. S. N., in his deep sea soundings, 500 miles north of Bermuda, found the greatest reliable depth ever obtained, and accompanying this, "thermometrical observations of a character indicating phenomena never before discovered, and which, at this moment, are an unsolved problem to the scientific world. In a long series of experiments, the temperature was indicated as existing ten, fifteen, and twenty degrees below the freezing point. This may be owing to the defective instruments, but if so, a consistency of error was preserved almost beyond the possibility of chance."

I make no pretentions whatever to scientific attainments, but I wish to give two or three facts, in my own experience as a practical man, that may help to elucidate, or throw one light upon this "unsolved problem."

I have been engaged for over twenty years in the curing of provisions, more particularly and extensively hams; and first, I have observed that in very cold winters, such as the last (1856-7), the temperature of the pickle in which the hams were immersed would fall to ten, fifteen, and twenty degrees below the freezing-point. The hams at the same time would be perfectly solid, and that, too, after being salted down in mild weather, for three or four weeks perhaps, before the commencement of the severely cold weather.

Secondly: My establishment is on the banks of the Ohio river; the lower story is subject to be overflowed or submerged in our greatest floods in the winter or spring. On one occasion of a flood we had several open tubs of pickle on the lower floor, which we found impossible to move before the water came upon us. The river rose at least eight feet above the tops of the tubs of pickle. We supposed that the pickle—from the motion and agitation of the waves and water—would all be destroyed, and the tubs displaced. But we were surprised to find the tubs in their places and the pickle uninjured, and in full strength, after being thus submerged for eight days.

These facts demonstrate two things: first, that pickle will not freeze or become solid at 20° below the freezing point; and second, that its specific gravity and density is such that it will not mingle with water without a considerable degree of agitation. I would, therefore, suggest the query to Lieut. Berryman, whether or not the peculiar thermometrical phenomena he discovered in the deep sea soundings were not owing to the increased density and saltness of the water at the bottom of the ocean. C. DUFFIELD.

Louisville, Ky., March, 1858.

[The deep sea soundings of Lieut. Berryman have done much to confirm a theory found in Lieut. Maury's works, as to the cause, or one of the causes, of the Gulf stream. Thus, for example, it is ascertained that, at a depth of two thousand feet, in the straits of Florida, the temperature of the ocean is several degrees above freezing, while in the deep soundings on the telegraph route it is found the temperature is ten to fifteen degrees below the freezing point. Hence, according to well-known laws, the warm and light waters of the Gulf flow off toward the colder regions of the north. At the same time, the denser waters of the northern Atlantic make their way southward to restore the equilibrium. Thus, there are two currents, an upper and an under, flowing in contrary directions. The upper is the Gulf stream; the under is frequently demonstrated by the fact of immense icebergs, reaching down thousands of feet below the surface of the ocean, and seen floating southward *against* the surface current.—EDS.

### Puddling and Boiling Iron.

MESSRS. EDITORS:—For some years I have been struck with the amount of metal which is actually wasted and lost in the above processes. In puddling, there is what is called drying the iron, and then it must be melted or refined to make plate metal; during these processes from 15 to 20 per cent is lost. In boiling iron, pig metal is used without refining, and it wastes from 5 to 8 or even 10 per cent., it also requires 100 pounds of scrap iron burnt to nothing, and 200 pounds of Champlain ore to keep the furnace in order, daily.

Some time ago I discovered a method of refining iron without melting it: that is, I can render it fit to be puddled by drying only, or make it equal to plate metal, and save the 15 or 20 per cent usually lost, and dispense with all scraps and ore. Is that patentable? and how can I be safe until I prove it?

OPERATOR.

Birmingham, Pa., Feb. 19th, 1858.

[Much has been done in the treatment of iron in a molten state to refine the product, and it depends entirely upon whether you have invented a new method of treatment, as to its patentability. You might lodge a description of you invention with some friend, if you do not feel like filing a caveat. You will be as well protected in one act as the other. EDS.

### Stalactites.

It sometimes happens that minerals occur in the form of conical masses, resembling icicles, which in many instances have a hole running through their center. Carbonate of lime offers the most numerous examples of this kind of formation, which is commonly occasioned by the dropping of water from the roof of a cavern. In this case, the water surcharged with carbonic acid holds the carbonate of lime in solution, and when that escapes, the mineral is deposited in the solid form. The cones thus depending from the roof have received the name of *stalactites*, and are, in most instances, placed immediately over similar formations on the floor, called *stalagmites*, by the union of which with the stalactites above, complete pillars, from the floor to the roof, are occasionally produced. Chalcedony and brown iron ore also occur in the form of stalactites.

### Circular Saw Mills—Patent Decision.

"The case of Page *vs.* Terry, to which we referred in our last issue, is one of more than ordinary interest, as it involves the exclusive control of the circular saw mills used for sawing lumber from ordinary saw logs throughout the United States."—Detroit paper.

There has been another suit tried since the above, (Page *vs.* Westervelt), in which the same points were at issue, and both resulted in favor of the plaintiff. Both were tried at Detroit, before Ross Wilkins, Justice of the Supreme Court of the United States.

The plaintiff claims that all circular saws used for that purpose, which have guides near the edge in combination with end-play to the shaft, are controlled by his patent, and that no one has any right to use them without a license from him.

The defence was put on the grounds:—

First, That from the drawings and specifications in the plaintiff's patent, the mill could not be constructed.

Second, That the patent was useless, as better lumber could be made without the plaintiff's improvements.

Third, That there had been no infringement by defendant.

The trial lasted a fortnight, and was closely litigated at every point.

The verdict was in favor of the plaintiff on all the issues, thereby giving him the complete control of that class of mills. There are many thousands of them in operation, and the demand for them is daily increasing. The charge of the Court was in favor of the plaintiff on nearly every legal question which arose in the case, and was substantially the same as that given by Judge McLean on the first trial.—*Angelica (N. Y.) Recorder.*

[The foregoing extracts were sent to us a few weeks since for publication; but from their tone we deemed them partial, and from the language used, we knew they were incorrect, and we therefore would not publish them. Since that period they have come to us again, accompanied with the following note of Judge Wilkins:—

H. B. NORTHROP, ESQ.—Dear Sir: The charge of the Court in the above case was substantially the same, on the *main* points involved, as that of Judge McLean in Page *vs.* Terry. There were other questions, collateral and incidental, most of which were decided in favor of defendant. The verdict was for plaintiff on the facts of utility, infringement, and the sufficiency of the specifications and drawings. The construction of the patent was with the plaintiff. ROSS WILKINS,

United States District Judge.

Detroit, Feb. 25, 1858.

This note of Judge Wilkins contradicts the language employed, as quoted from the "Detroit paper," which conveys the idea plainly that the case involved the exclusive control of all circular saw mills for sawing lumber from ordinary saw logs throughout the United States.

The decision referred to Page's improvements exclusively; and his patent, granted July 16, 1841, sets forth what those improvements are, in the following claim:—

"I claim the manner of affixing and guiding the circular saw by allowing end-play to its shaft, in combination with the means of guiding it by friction rollers embracing it near to its periphery, so as to leave its center entirely unchecked laterally." There is also a disclaimer as follows: "I do not claim the use of friction rollers embracing and guiding the edge of the circular saw, these having been previously used for that purpose, but I *limit* my claim to their use *in combination* with a saw having free lateral play at the center."

The method of applying the friction rollers, by attaching them to pivots, is also claimed; likewise the forming of a long carriage by uniting two short sections by means of a rack—thus rendering the mill portable; but we have quoted all that is necessary from the claims which have a bearing on the above case. A patent was granted for circular saw mills as early as 1795, to Z. Cox, of Georgia; and in August, 1834, Thomas Blanchard obtained a patent on improved circular saw mills for sawing lumber from logs. Mr. Page's patent is undoubtedly a very important one, but it does not by any means cover circular saw mills in the broad sense of the term. This patent was extended for seven years from July 16th, 1855.

### Challenge to Inventors of Breech-Loading Guns.

Lieut. John C. Symmes, of the U. S. Ordnance, Watertown Arsenal, Mass., and inventor of a breech-loading rifle, challenges all inventors of breech-loading guns in any service of any country in the world, and the Sharp's Arms Co., and Colt particularly, to come forward and test the relative accuracy of their guns against his, during the month of May next, at the above place. The stakes to be from $100 to $500 a side. His money is posted with Messrs. Haven & Co., No. 7 Beaver street, New York. If no answer is made to this challenge before the 8th of April he will consider that his is the best gun. Inventors who accept the challenge will write to the Lieutenant, as above, for particulars.

### Glaciers.

These are accumulations of ice and hardened snow, occurring in the valleys and on the slopes of the Alps, and other lofty mountains. Saussure distinguishes two kinds of glaciers, viz., those contained in the valleys more or less deep, and which, though at great elevations, are yet commanded on all sides by mountains higher still; and those not contained in the valleys, but spread out on the slopes of the higher peaks.

### Momentum.

This term is used in mechanics to signify the force of percussion, or the intensity of a moving body, and this is always equal to the quantity of matter multiplied into the velocity. Thus, a ball of four pounds weight moving at the rate of eighteen feet in a second, has double the momentum of a ball weighing three pounds, moving at the rate of twelve feet in a second, for $4 \times 18$ is double $3 \times 12$.

### Anilic Acid.

This is called also indigotic acid, from being produced by the action of diluted nitric acid upon indigo. Carbonic acid is produced with it, and remains in solution, the anilic acid separating it in light yellowish-white prisms, which are fusible and volatile, and dissolve in 1,000 parts of water. Anilic acid decomposes acetate of lead, forming with the lead a crystallized anilate.

### The Coming Eclipse.

An eclipse of the sun will occur this year in the month of September; but it will only be central and total to the inhabitants on the southern part of our continent—America—where there are no observatories, we believe. Some of our scientific institutions should take measures to send out some of their *corps*, to make observations in Brazil and Peru.

We are under obligations to Hon. John Cochrane, Hon. W. D. Bishop, and Hon. S. A. Douglas, for congressional documents.

We have also received from Benj. C. Howard, Esq., author of Howard's Reports, a report of the discussions of the Supreme Court of the United States, and the opinions of the Judges thereon in the case of Dred Scott *vs.* Sandford. It is a document of legal and historical interest.

The onion is a superior disinfectant. Two or three good-sized ones, cut in halves, and placed on a plate on the floor, absorb the noxious effluvia, &c., which are generated in the sick-room, in an incredibly short space of time. They should be changed every few (say six) hours.

TO SUBSCRIBERS.—This number commences the second half of Vol. XIII, SCIENTIFIC AMERICAN. Now is the time to send in half-yearly subscriptions.