

Communications.

Our Washington Correspondence.

To the Editor of the Scientific American:

Business in the Patent Office is steadily increasing, the receipts in cash for the month of October being \$59,042.59, the greatest amount received in any month of November since the establishment of the office, an increase of over ten thousand dollars over the receipts for the same month last year, and of four thousand over the previous month of this year. Notwithstanding this the patent agents of this city, almost without exception, are complaining of hard times, and that they are doing next to nothing; from which it would appear that your agency, with the others outside of Washington, must be doing the cream of the business.

The accounts of the Patent Office are arranged in monthly statements, so that they can be readily compared, as the officers have an idea that the monthly receipts are a tolerably correct measure of the fluctuations of business throughout the country; that when all classes of industry thrive the best, the applications for patents and the receipts of fees increase accordingly; and that by comparing the receipts of the office, they can form a good idea as to the state of business throughout the country. From the present steady increase of receipts, they therefore argue that business generally is improving, and that an era of prosperity is now about to begin.

PATENT OFFICE PRACTICE.

A recent decision of the Commissioner, in the case of C. R. Everson's application for a patent on bottoms for wash-boilers, shows a liberal spirit of construction of the patent laws, and it is to be hoped that some of the examiners will take due notice thereof and govern themselves accordingly, thus earning for themselves good names instead of the bad ones they now get from both applicants and attorneys. In the case referred to, Mr. Everson wished to obtain a patent on making the bottoms of washboilers, having two pits, in one piece, as heretofore it had been the practice to swage each pit in a separate blank and join them together between the pits, the applicant claiming that no one but himself had succeeded in making the double pitted bottoms in one piece, owing to the metal breaking between the pits during the process of swaging. The applicant had overcome this difficulty, and therefore asked for a patent covering the idea of making such bottoms in one piece, but his application had been refused by the examiners, on the ground that there was no invention in making in one piece what had heretofore been made in two. The Commissioner reversed this decision, stating that the applicant had shown something beyond a mere duplication of the dies, mechanical skill, or good judgment. The use of the seam between the pits had long been felt as a great defect in this class of bottoms, but no one had ever succeeded in putting double pitted bottoms in one piece on the market, which showed that there was a great difficulty to, overcome in manufacturing them. By considerable experimenting, the applicant had arrived at the right proportions in making the blank which allowed of both the pits being formed in one piece, without breaking the metal between them; and as this experimenting showed that a mere duplication of the punches or mechanical skill was not sufficient to accomplish the desired object, and as it overcame a difficulty long known, but which no one had heretofore remedied, although the amount of invention is not very great, yet if found to exist at all, which the Commissioner thinks was fully proved, the applicant should receive his patent.

In the interference case of Yost and Warner vs. Powell, the Commissioner affirmed the decision of the Board of Appeals and Interference Examiner, that Yost and Warner were the inventors of the combination in controversy, as it was clear, amid the mass of contradictory testimony filed, that Powell was in the employ of Yost when the invention was made, that the improvement was one ancillary to the preconceived plan of re-organizing the "Climax" machine for the construction of which machine Powell and other workmen were employed by Yost; and the Commissioner therefore decided, in view of this, that Yost was entitled to use the suggestion of Powell, as to the arrangement of the parts in controversy, even if it is granted that Powell made the suggestion first, which, however, does not appear from the evidence to be very clearly made out. The Commissioner also decided that Yost and Warner should be considered as joint inventors, as the evidence showed that they were in consultation when the invention was in progress, which the Commissioner considers sufficient to justify their claim, especially in view of their oath, as the office does not undertake to go behind the oath of joint invention, unless it appears from the evidence that such joint invention was impossible.

In the case of R. W. Hamilton's application for a patent for an independent condensing apparatus, the Commissioner decided that in a patent for an apparatus of this character, although an air pump formed one of the essential elements of the combination claimed, the applicant had no right to a claim for such parts as were peculiarly applicable to air pumps, such belonging to a well known sub-division of a different class, and that therefore those features should be claimed in a separate patent.

The Empire Mill of St. Louis having applied for a trade mark, in which the words "snow white" formed a conspicuous part, the examiner rejected the application, and his action was confirmed by the Assistant Commissioner, on the ground that the words were well known and commonly

used, as indicating anything very white; and as one of the main indications of the quality of fine flour was its whiteness, it would seem that any one would have the right to apply these words to flour, and that they should not therefore be monopolized.

I find the following in one of our city papers: "It may be remembered that some time ago a Frenchman, by the name of Magin, suddenly sprang into notoriety by announcing that he had discovered a process by which cotton fiber could, by some chemical process, be turned into silk. Among his many propositions was the one—of special interest to the people of Washington—of erecting a mammoth manufactory here, from which the markets of the world could be supplied. In an evil hour he laid his papers and specimens of the manufacture before the examiner at the Patent Office, and applied for a patent. Here his brilliant plans for filling his pockets, and indirectly those of the people of the District, received a check, his papers being returned and his specifications of imitation silk, made by his process, declared to be real silk. Monsieur, with the true French spirit, accepted gracefully the verdict and took his departure for greener pastures. In New York he interested Seligman and others in the scheme, and money was advanced to enable him to go on with the manufacture. It is hardly necessary to say that Magin, as soon as he got hold of the money, decamped, and his whereabouts, despite the careful search of his anxious friends, remained a mystery. But such a man was not born to blush unseen. A little while ago an application was received from England for a patent on substantially the same discovery, and, as if conclusive proof of its worth, the immortal name of Magin was appended as a witness. The application was of course rejected, and Magin once more sinks into obscurity until some new rascality shall bring him into prominence."

The part relating to the first application is substantially correct, but I have been unable to find any corroboration of the statement as to the application said to have been received from England."

PATENT MATTERS IN CONGRESS.

The House of Representatives has passed a resolution directing the Committee on Patents to report a bill to prevent the maintaining of suits against persons who ignorantly purchase articles which infringe upon patents.

Mr. Townsend, from the Committee on Patents, reported a bill to repeal sections 4,924-6-7-8 of the Revised Statutes, relating to extensions of patents, and declaring that it shall be unlawful hereafter for the Commissioner of Patents to renew or extend any patent whatever. He states that the object of the bill was to take away from the statute book sections of the law which were dead and inoperative; but it may be that there is something more in this bill than appears on the face, and it is possible it is part of the general attack that is now being made on our patent system.

The House Committee on Patents have passed a resolution to the effect that they will recommend to Congress no extension of patents, excepting where parties have been "providentially hindered" from enjoying the benefits of their patents.

Both Houses of Congress have agreed to appropriate the money (\$45,000) called for by the Commissioner of Patents for repairing the models injured in the late fire in the Patent Office.

The President has sent to the Senate a draft of a treaty for the reciprocal protection of trademarks in the United States and Great Britain, which was signed in London by Lord Derby and Mr. Pierrepont, October 24, 1877. I have been unable to procure a copy of it, as treaties are not made public until they have been acted on by the Senate, but the following is believed to be a correct synopsis of it:

The subjects or citizens of each of the contracting parties shall have in the dominions and possessions of each other, the same rights as belong to native subjects or citizens, or as are now granted, or may hereafter be granted, to the subjects and citizens of the most favored nation in everything relating to property in trade marks and trade labels. In order to obtain this protection, the manufacturer or tradesman must fulfil the formalities required by the laws of the respective countries.

Mr. Harris of the Naval Committee of the House is preparing a plan for the erection of a new Navy. He proposes to provide for the appointment of a board of competent engineers and naval constructors, whose duty it shall be to superintend the building of this new navy, according to a definite plan. The entire cost is to be \$50,000,000, of which \$5,000,000 is to be appropriated annually. No further appropriations are to be made for the repair of old vessels where the cost of such repairs would exceed 40 per cent of the original cost of the vessel.

A bill has recently been brought into the House to virtually disband the Bureau of Engraving and Printing at the Treasury, so as to compel the department to have all its work done by the bank note engraving companies in New York and elsewhere. This object of this will be fully seen when it is considered that, under the recent re-organization of the Bureau by Mr. McPherson, who has dismissed all superfluous employees, and is running the establishment in business-like fashion, doing all the work possible by piece-work, and so cutting down the expenses that he will have, at the end of the fiscal year, a surplus of about \$600,000, the Bureau can and does do work cheaper than the outside establishments, because it has no profits to make. That this is so is shown by the fact that the Treasury advertised for bids for doing certain classes of work, and the Bureau of Engraving and

Printing underbid everyone, and the result is that the Treasury pays for printing the backs of notes and internal revenue stamps alone during the present fiscal year, over \$109,000 less than it had to pay to the engraving companies for the same work last year.

To secure the importation, free of duty, of all descriptions of raw wool, copper, and copper ore, Mr. Willis, of your city, has introduced a bill providing that no duty shall be levied or collected on these articles after July 1, 1878.

To cater to the anti-Chinese prejudices of the Californian laborers, two bills have recently been introduced, one of which enacts that a capitation tax of \$250 shall be levied on every Chinese passenger landed on our shores, and the other forbids vessels taking on board more than ten Chinese, with the intention of bringing them to the United States, under a penalty of a fine of \$100 and six months imprisonment for every passenger above ten.

NATIONAL EDUCATION.

The National Education Association is now holding a meeting in this city. Among the questions under consideration are the following: "Measures for strengthening the National Bureau of Education." "The establishment of a National Educational Museum." "The establishment of an Educational Fund by the General Government, and the appropriation of the proceeds of the sales of public lands to school purposes." "A system of national educational statistics." "The best school organization for a State." "The best school organization for a city." "Public high schools," and "Education for the South." In a paper read by Gen. Eaton, the Commissioner of Education, on "What the General Government has done to aid Education," he stated that the government had given outright nearly 1,000,000,000 acres land and \$47,785,177.93 in money. This however, includes what had been appropriated for West Point and the Naval Academy at Annapolis.

THE MISSISSIPPI JETTIES.

The Secretary of War has received an official notification from Captain Brown, the inspecting officer at the jetties, that there is now a practicable channel through the jetties 21 3-10 feet deep at average flood tide; that the only interruption of a practicable channel of 22 feet deep was but 90 feet in length; and that a line of soundings with 22 4-10 feet least depth extends through the bar to deep water.

MUTILATED CURRENCY.

The United States Treasurer has issued a warning against the constantly increasing attempts in various sections of the country to cheat the government and innocent parties by practicing the old trick known as the "piecing" process, whereby a given number of currency notes of similar denomination are cut to pieces and then pasted together, so as to make more notes than there were at first. Ten notes are generally taken, and by adroit piecing, eleven are made. About one tenth is cut off from one end of a note and the large piece passed as it is. Two tenths is next cut from a second note, and the small piece from the first note attached to the large part of the second note; the two tenths pieces are used to replace a three tenth piece cut from a third note; and by continuing this process, cutting off a larger piece each time, eleven notes are made from ten. The makers of these pieced notes do not usually attempt to have them redeemed, but pass them into the hands of innocent parties who have to suffer the loss.

CONSULAR REPORTS.

The United States Consul General at London, in a recent dispatch, refers to the immense trade in American cotton goods that is springing up in England, and states that, "millions of dollars" worth have already been disposed of in that kingdom. He also states that the American manufactures, of what is known as Birmingham wares, more especially agricultural implements, are very favorably regarded in Great Britain and her colonies. With regard to the latter, he believes that it is the superior lightness and finish of the articles, together with the willingness of manufacturers to vary patterns to suit the wishes of the customers, that has brought about the preference for American goods.

The same gentleman, in a previous dispatch, refers to the influx of workmen from the United States to various points in Great Britain, in consequence of a notion spreading among American mechanics that the labor market on the other side of the Atlantic is better than in the United States, which induces many to emigrate with the confident hope of procuring steady and remunerative employment, only to find themselves strangers in a strange land, without either money or work, and no chance of procuring either, unless they have been fortunate enough to make contracts before leaving home, which they can only obtain by taking the work left by some native workmen, who are on a strike. Under these circumstances their money is soon gone, then what clothes they can spare are sold for food, until they appear, half starved and with barely sufficient raiment to cover their nakedness, at the consulates, begging to be sent home, feeling very much surprised and indignant when informed there are no funds in the consul's hands for such a purpose.

FORESTS IN THE UNITED STATES.

To show the necessity of taking some means of protecting our forests, and the need of the Forestry Commission it is proposed to organize, it is stated that within ten years no less than 12,000,000 acres of forest have been cut or burned over in the United States. Much of this timber is used for fuel, twenty-five cities being on record as consuming from 5,000 to 10,000 acres each. Fences use up much timber; and rail

waysleepers require the product of 150,000 acres per annum. The amount of lumber timber yet standing is no longer large, and but for the fact that it must gradually increase in price, and thus be less wastefully used, it would soon be come so scarce as to be very dear. Nearly \$150,000,000 is estimated to be invested in the whole timber industry, employing 200,000 men.

Washington, D. C.

OCCASIONAL.

Vulcanized Fibre.

This material is now being manufactured to a considerable extent by a company operating in Wilmington, Del., and it is believed that it will in time assume a place in the arts somewhat akin to rubber or horn, as it is flexible like both, but is without the elasticity of the former, although it may be, like it, manufactured of different degrees of hardness. Several patents connected with its manufacture have been granted of late, and we propose to give a *resumé* of the "state of the art" as exhibited in the records of the Patent Office.

The first patent we find relating to this subject is the English patent No. 787, of 1859, granted to Thomas Taylor, of London, the main idea of which appears to have been to treat paper so that it would be less porous, have greater strength and stiffness, and assume the toughness, semi-transparency, and general appearance of parchment. The process is given by the inventor as follows:

"I take a solution of the salt called chloride or muriate of zinc, and having rendered it as neutral as may be by the addition of oxide or carbonate of zinc, I concentrate the solution, by evaporating it until it has acquired, when cold, the consistence of syrup. In this case it will have the specific gravity of 2100 or thereabout. The solution of zinc being thus prepared, I immerse or float upon its surface the paper to be treated, until it is fully saturated with the solution. The paper is then withdrawn, and the adhering liquor being removed by a scraper, roller, or any other mechanical means, it is either immediately plunged into water or allowed to remain for a short time until it is apparently dry, then plunged into water and washed therein until all soluble matter is removed. In cases where it is desirable to retain a portion of oxide of zinc in the paper, the paper, after being partially washed, is immersed in a weak solution of a carbonated alkali, and afterward thoroughly washed in water. The paper may then be pressed and dried and submitted to the ordinary processes for obtaining a smooth or glazed surface, or it may be sized or colored.

"After this treatment, it will be found that the paper is more or less changed—has contracted in volume, become more dense, and is less porous than before, while at the same time it is much stronger. When, however, it is desired that a more complete change should be produced in the paper, the solution of zinc should be moderately heated before immersing the paper; or the paper, after having been drawn through the cold solution and the adhering liquor removed, should be exposed to a gentle heat, varying from 80° to 90° Fahrenheit to little short of boiling water, according to the effect that is desired to be produced on the paper. In determining the amount of heat to be applied, the kind of paper used, its thickness, density, the strength of the zinc solution, and the length of time during which the paper is exposed to heat, should be considered.

"In general, I find that when ordinary blotting paper is used, and the paper is heated by the application of metallic surfaces, a temperature of 120° to 140° Fahrenheit is sufficient. A good criterion of the completion of the change is to be found in the circumstance that the paper becomes somewhat swollen and apparently dry. It also passes from a semi-transparent and rather rigid state to one that is more opaque and flaccid."

The heating of the paper may be accomplished either by warming the solution of zinc to the required temperature, laying the saturated paper on smooth heated surfaces, or by passing such heated surfaces over the sheets as in ironing cloth. If the paper, however, is in the form of a continuous web, it may be passed between heated rollers or through a hot chamber. The inventor also proposes to dissolve, by the aid of heat, cotton fibre, starch, dextrin, or gum in the concentrated solution of chloride of zinc; and also to add to the solution, prior to using it, the chlorides of tin, calcium, or magnesium; the object of this addition, however, is not stated.

After the sheets of paper have been treated with the solution of zinc they will adhere together, and if a warm iron is passed over them they will become permanently united. In this way sheets of any thickness or size may be formed, or a vessel made so as to be of one piece.

The next patent is that of Aug. T. Schmidt, of Pittsburg, Pa., dated April 4, 1871, which is stated to relate to the treatment of vegetable fibrous substance, whereby they are greatly increased in toughness and strength, rendered impervious to water, capable of resisting the action of most acids and alkalis, and made either firm and hard or soft and pliable, as may be desired. The process may be applied to paper sized and unsized, or to paper pulp, which after treatment may be made into sheets of paper in the ordinary way, or moulded into any desired shape.

The first step of the process is saturating the fibrous substance in a bath of concentrated "mother water," or liquor resulting from the manufacture of chloride of zinc, or of the chlorides of tin, calcium, magnesium, or aluminum. As "mother water" is a waste product not readily attainable in many places, it is stated to be more convenient to produce it for the express purpose from the manufacture of chlorides

which are easily manufactured and readily sold. For this purpose metallic zinc is dissolved in dilute muriatic acid, the solution concentrated by heat to about 70° or 75° Baumé, and then cooled, when the solution will deposit crystals of chloride of zinc, which, being removed, leaves the required "mother liquor." To this is to be added sufficient of a solution of chlorine in water to enable the smell of chlorine to be perceived when the liquor is agitated, and enough carbonate of zinc to render the solution neutral.

If the substance to be treated is to be made very opaque, there should be added to the bath as much oxide of tin or zinc as it will retain in solution.

The fibre, if in the form of sheets or rolls, should be passed through a heated chamber or over a hot roller as it enters into the bath, and after passing through the liquor it is pressed between rollers to remove the superfluous liquid, and is then washed in water, which may be made slightly alkaline by the addition of carbonate of soda so as to neutralize any adhering liquor. Paper thus treated may be made of any desired thickness by pressing a number of sheets together as they pass from the chemical bath, or cylindrical objects may be formed by continuous wrapping of paper around a cylinder until a sufficient thickness is formed. Paper pulp or other vegetable fibre may be saturated in the chemical bath and then moulded by pressure into any desired form.

To make from paper, paper pulp or other vegetable fibrous substance, an article having the solidity and hardness of horn or vulcanite, the same bath before described is employed, but concentrated to a strength of about 50° Baumé, or upward, according to the article to be treated. The bath is heated to about 150° Fahrenheit, and the paper or other article, after being first heated and then saturated in the bath, as above described, is passed (on leaving the bath) over or between heated rollers, and then plunged in water, pure or only slightly alkaline, in which it is allowed to remain for from six to twenty-four hours, according to degree of hardness required, after which it is subjected to pressure to solidify it and make it smooth or give it any desired shape. It is then slowly dried at a temperature of from 70° to 80° Fahrenheit. It may be made of any required thickness by bringing together several plies or layers as it passes out of the chemical bath. A still greater degree of hardness may be attained by dissolving in the chemical bath vegetable fiber, dextrine, gum, or starch, and also by sifting on to or between the layers of the paper or fabric, as it passes from the bath, any mineral substance or gum.

A rough texture or surface may be given by sifting emery, powdered glass, sand, or other mineral substance between the layers or on the outer surface, as may be desired, and paper or other vegetable fiber thus prepared may be used for many purposes in the arts. If, on the other hand, it is desired to produce a substance having great flexibility and softness, resembling soft vulcanized rubber without the elasticity of that article, the paper or other fabric is immersed to saturation in the chemical bath in the manner first above described, and then, as it leaves the bath, it is passed over a heated roller of lead (or other suitable material) into a washing vessel containing a weak solution of any suitable alkali in water, and thence into a bath of a solution of water and glycerin in the proportions of two parts, by measure, of water, to one of glycerin, or a solution of sugar and water in similar proportion. This glycerin or sugar bath may be used cold, but it is better to have it heated a little below 212° Fahrenheit. In this bath it should remain about six hours or more, according to the degree of softness required.

Paper thus prepared, and made of suitable thickness by uniting several plies as they pass from the chemical bath, makes excellent belting, the strength of which may be increased by introducing between the layers of paper cloth made of cotton or vegetable fiber, either dry or previously saturated in the chemical bath, as may be preferred; but it adheres better if inserted dry.

In making cylindrical articles by continuous wrapping around a cylinder a condensing roller should be used, so arranged as to give the requisite pressure, and yet allowing a gradual separation as the thickness of the article increases, the roll being heated to from 120° to 200° Fahrenheit; and the cylinder around which the paper, etc., is being wound should be partially immersed in the bath of alkaline solution, or of glycerin and water, or sugar and water, as the case may be.

Fibrous material treated as above described, when of suitable thickness, is extremely soft and pliable, and resembles soft leather in texture, and may be used for many purposes for which leather is employed. When of increased thickness it may be employed for belting, packing, and various other purposes to which soft vulcanized rubber, owing to its great elasticity and its liability to be acted upon by heat and various chemical substances, is inapplicable. By omitting the glycerin or sugar treatment, it may be made as hard as horn and used for various purposes, as it is susceptible of being moulded or otherwise formed into any desired shape.

The article thus produced, whether soft or hard, is not readily combustible, although when exposed to sufficient heat it will burn, but without flame. It may be used to advantage in making hose or pipe for conducting water, gas, and other fluids, and also for the bodies of carriages, railroad cars, or boats, and for various other purposes in the arts and manufactures.

The next U. S. patent is No. 114,880, issued to Thomas Taylor, May 16, 1871, and is precisely the same as his English patent, given above.

On October 3, of the same year, E. S. Hanna obtained a

patent on a washer for carriages, machinery, etc., made of this material, which patent was reissued May 20, 1873, No. 5,422.

On the 31st of the same month, D. W. Hanna obtained a patent, numbered 120,380, in which it is stated that from 40 to 90 per cent of the cost of the solution may be saved by continually using the same water for washing the surplus liquor from the paper, until it reaches a gravity of 30° to 40° Baumé, and then evaporating it by boiling until it reaches from 65° to 70° Baumé, at which gravity it may be used for treating the paper instead of the mother liquor before described. When a hard paper is required, nearly all of the solution is washed from the paper, and the saving is greater; but when soft paper is to be made, less of the solution is washed out, and the saving is smaller.

E. S. Hanna obtained a patent February 27, 1872, No. 124,133, for the use of this material as a packing for journal boxes, for which he claims it is peculiarly suitable.

J. H. Savery patented a ferrule for boiler and condenser tubes April 6, 1875. He claims that it has peculiar properties that adapt it to this purpose, as it expands under the influence of either heat or water, and hence will always keep the tubes tight.

The next patent we find is that of R. H. Plass, issued December 19, 1876, covering the use of this material in chair backs and seats.

The President of the Vulcanized Fibre Company, Mr. William Courtenay, obtained two patents on July 24, 1877, Nos. 193,332-3, the first of which is for making tubular articles, such as buckets, measures, cans, drum shells, etc., by taking sheets of vulcanized fiber, chamfering the edges to be joined, and, by immersion in a bath of chloride of zinc, partially dissolving the edges. A tube is then formed with such sheets upon a mandrel of suitable size, and the edges cemented together by heat and pressure, being held by clamps, and heated in any suitable way. The tubes are then soaked in water to extract the surplus chloride, and while still wet are slipped on mandrels, which may be of any desired form, and allowed to dry gradually. The mandrels should be made in sections so as to collapse, because the tubes in drying shrink tightly upon them. The second patent (No. 193,323) is for a can made from a tube formed as above described; but before drying, the edges of its ends are turned over by hand so as to form beads or flanges, after which it is slowly and carefully dried. If preferred, the beads or flanges may be strengthened by being turned over a wire or a narrow band of the vulcanized fiber. A bottom of the same or other material is to be set in place and secured in any convenient way.

In the patent No. 196,894, issued to Thompson Hanna, November 6, 1877, it is stated that the vulcanized fiber has a slight tendency to absorb moisture, but that this may be overcome by subjecting the manufactured article from 24 to 48 hours to a bath of strong nitric acid, or a mixture of nitric and sulphuric acids, or one of sulphuric acid and nitrate of potash, or a vapor bath of the fumes arising in the manufacture of bisulphate of potash, by which the material is rendered almost absolutely impervious to water.

The patent No. 196,894, issued to the same gentleman on the same day as the last, covers another process for saving the chloride of zinc which is washed out of the fiber, in which the washing liquid, instead of being evaporated, is treated with sufficient of a solution of carbonate of soda to cause a complete chemical reaction, the result being carbonate of zinc is precipitated and chloride of sodium remains in solution. The advantage this process has over evaporating is that the precipitated carbonate of zinc commands a high price and is worth as much or more than the original cost of the solution, by which means the paper or fiber is treated with very little cost. The carbonate may be sold for other uses, or may be employed again in treating fiber, by dissolving it with hydrochloric acid. Carbonate of potash or any other alkaline carbonates may be used instead of the carbonate of soda.

The last patent issued in this connection is No. 197,252, granted to Mr. Courtenay, November 20, of this year, which covers the use of vulcanized fiber for the sounding boards of musical instruments, for which purpose it is said to be peculiarly well adapted, as atmospheric changes have very little effect upon it, and sounding boards made from it are not likely, therefore, to split or warp.

Inventions Patented in England by Americans.

From October 9 to November 20, inclusive.

MERCURY MOTOR.—T. A. Shinn, Pittsburg, Pa.
 PATTERN CARDS FOR EMBROIDERY.—T. E. Parker, Mass.
 PAINT MILL.—T. W. Masury, Brooklyn, N. Y.
 PAINT CAN.—T. W. Masury, Brooklyn, N. Y.
 PIANOFORTE.—C. E. Rogers, Boston, Mass.
 PLOW.—I. E. Holmes, Washington, D. C.
 PLOW, ETC.—T. Bond, New York city.
 RAILWAY SIGNAL.—F. W. Eames, Watertown, N. Y.
 ROOFING.—P. Pierce et al., Brooklyn, N. Y.
 ROLLER SKATES.—R. Hutton, Brooklyn, N. Y.
 ROTARY PUMP.—T. H. Asbury, Philadelphia, Pa.
 SASH FASTENER.—R. H. Rose, New York city.
 SEWING KNIT FABRICS.—W. Pearson, Philadelphia, Pa.
 SEWING MACHINE.—J. E. A. Gibbs, Steel's Tavern, Va.
 SHOE FASTENING.—J. S. Hall, San Francisco, Cal.
 SHOE CRIMPING.—Philip Fisher Shoe Company, New York city.
 SHUTTLE FASTENER.—T. B. Rogers et al., New York city.
 SPOOL PRINTING MACHINE.—A. C. Gould et al., Boston, Mass.
 SURGICAL INSTRUMENT.—J. C. Allen et al., Buffalo, N. Y.
 SUBMARINE TORPEDO.—H. T. Brown, New York city.
 SUGAR-CUTTING MACHINE.—W. Jasper et al., San Francisco, Cal.
 TIME DETECTOR.—W. W. Le Grand, Louisville, Ky.
 WATER FILTER.—F. Wallrout et al., New York city.
 WATER MOTOR.—O. J. Backus, Newark, N. J.
 WOOD, TREATING.—Ira Hayford, Boston, Mass.