BOUQUETS FROM FIELD AND GARDEN.

Our contemporary *The Garden*, in discussing the arrangement of bouquets, states that the excessive formality of the present orthodox form of presentation or ballroom bouquets exhibits a kind of close packing, in which the delicate graces of flower form are entirely submerged in consequence of this close, even tight, juxtaposition. The end sought in this kind of grouping appears to be a method of packing together (according to price) an abundance of rare and, consequently, expensive flowers, all of which must be got into the same lump. This system, of course, necessitates the use of such flowers as are more or less rare, and there is, perhaps, no other way of making up a bouquet that shall be fairly worth, in intrinsic value, from $1 to $25. The cut flowers of which the bouquet is composed are, probably, worth all the money, at their respective market prices; and for certain occasions, bouquets so manufactured may be deemed appropriate, even necessary; but as works of art they are utterly valueless. A few elegant grasses from the meadow, combined with a selection, at any season, of flowering branchlets from the shrubbery or common garden border, and a freehanded and tasteful grouping, without crowding, and with a well balanced proportion of natural foliage, may be made to form a composition such as a painter might desire to transfer to his canvas, while he assuredly could never wish to dip brush in color for one of the expensive bouquets of the cauliflower shape. Such has long been a favorite theory of the writer in the matter of flower grouping; and the other day he found it gracefully exemplified on the drawing room table of a friend, by a graceful half wild bouquet from field and garden, formed with the free grace and uncrowded arrangement which, as nearly as may be, illustrated his views. It is needless to state that a lady's fingers and a lady's taste were the joint authors of the composition. In the arrangement, each flower and grass of the gathering had been made to find its seemingly proper place, unjostled by its neighbor, and so freely and easily located in its basket work receptacle, supported on three slender canes of bamboo, that even its foliage had room to display its graces and modes of growth. With the permission of the lady flower grouper herself, a drawing was at once made, a reproduction of which, in the form of a careful wood engraving, and for which we are indebted to our valuable contemporary, will be found on this page.

The central object was a small spray of guelder rose, with two or three of its spherical masses of snowy flowers, surrounded and supported by their own leaves. There was also a rose, perhaps one of the first of the season in the garden where it was gathered; and there were some smaller Scotch roses, accompanied by sprays of their miniature foliage. There was also, it will be seen, a flower of white pink, with buds, and with leaves which have room to display their delicately slender forms and the pale glaucous hue of their dainty green. A common corn flag towered in the center; and on the left was a single iris, backed by its blade-like leaves. Grasses of several kinds shot upward, crowned by their feather-like inflorescence, which added a pleasing lightness and careless grace to the composition. The effect was hightened as regards color by two sprays, not more, of pelargonium flowers, gathered with their leaves, and by two or three kinds of fern, one gracefully weeping frond being allowed to droop negligently to the table, the slender extremity of which curled itself fantastically, as with a set declaration against primness, trimness, or any kind of slavish formality.

The value of grasses for arrangements of this kind is well shown in this case. Ferns themselves cannot show so airy a grace or such delicacy of form, Many graceful wild grasses may be gathered in the fields, and many beautiful hardy grasses are as easily grown in any cottage garden as the hardy flowers of which this charming bouquet was composed.

A JUNE BOUQUET OF GRASSES AND HARDY FLOWERS.

Magnets.

M. Jamin describes experiments which support these three propositions: (1) The number of elementary magnetic threads, and so the quantity of magnetism a magnet may contain, depend only on the middle section. (2) The opening (*epanouissement*) of the poles of these threads, or the distribution of intensities, is regulated by the form and extent of the exterior surfaces of the magnet. (3) If the surfaces diminish, the tension increases till they become insufficient to allow of the elementary poles opening out, and a portion of the two contrary magnetisms disappears, reproducing the neutral state.

On combining 22 magnetized plates (each 0·04 inch long, 0·04 inch thick, and 2 inches broad) in a bundle, with pasteboard 0·032 inch thick between adjacent plates, each plate lost magnetism, and so the bundle, the loss of the latter being 50 per cent, which is less than in the case (first experimented on) of superposition without intervals; the loss was then 66 per cent. In this first mode all the magnetism retained was carried to the exterior; there was none, or almost none, between the plates. In the other mode the quantity remaining (151·1) was divided into two portions:—(1), 85·5, which was expanded on the exterior; and (2), 65·6, which remained in the intervals. With wider intervals the exterior magnetism is diminished, the interior increased; and gradually the plates act as if they were independent.

Carbon in Cast Iron and Steel.

M. Boussingault contends that in cast iron, and in certain steels, the carbon is in two states—(1) combined with the iron and therefore invisible; (2) disseminated in the metal, either as an amorphous black powder or in brilliant crystaline laminæ, constituting the graphite of mineralogists. There is reason to believe that when cast iron is in fusion all the carbon is combined and is invisible, but that a portion becomes free on cooling. On acting upon a carburetted iron with acids, the state of the carbon is at once made known. The free carbon remains mixed with the insoluble residue. If no graphite is present, but merely combined carbon, there is no carbonaceous residue. The carbon is eliminated during solution, imparting a characteristic fetid odor to the hydrogen gas given off, due to volatile oily matters. This oily matter was noticed by Proust in 1799. M. Chevreul remarked that in this case chemical forces give rise to compounds analogous to those formed by vegetable organisms. More recent researches have established that these compounds are not merely analogous but identical. The author does not believe that a steel exists absolutely free from carbon.

Ex-Commissioner of Patents S. S. Fisher.

With the deepest regret we record the death, by drowning, on August 15, of Samuel S. Fisher, Esq., of Cincinnati, O., formerly Commissioner of Patents, the duties of which important post he performed with the most distinguished ability till the end of the year 1870, when he resigned. The accident which terminated this useful life was truly calamitous, as Mr. Fisher's son was drowned at the same time. They left Elmira, N. Y., on a summer boating excursion, intending to float down the Susquehanna to Havre de Grace, and enjoy the wonderful scenery which that river presents. The boat was unfortunately capsized in the Conewago Rapids, fourteen miles below Harrisburg.

The record of Commissioner Fisher will long survive him. His learning and practical good sense, accompanied by great force of character, gave him more than customary authority over the important department in which he presided, and enabled him to carry out many salutary reforms in the administration of the Patent Office. As a patent lawyer, he was widely renowned, and many of the most important litigations were entrusted to him, and some very heavy cases were in his office at the time of his death.

Commissioner Fisher served his country in the late war, as Colonel of an Ohio regiment, was President of the Board of Education in Cincinnati, and has filled many other important public positions.

RECENTLY, at New Haven, Conn., and vicinity, there was continuous rain for nearly forty hours, during which period eleven inches of water fell—one third of the annual fall.

Sword Manufacture in Birmingham.

The manufacture of swords is one requiring great skill in all its departments. Succes in this work depends upon the acquired skill, the long experience, the educated eye, and the manipulative power which seem to require many generations of workmen before they are attained in their higher excellence. The slightest mistake in working would make a sword blade useless, and this applies to each of the three great processes through which it has to pass—forging, tempering, and grinding. From the necessity of all the work being skilled work, each part of a sword—the blade, the grip, the hilt, the scabbard—is made by hand, and the witnessing of the manufacture is thereby rendered especially interesting. For the excellence of his swords, and for the skill displayed in every part of the work, no name in the history of the trade surpasses, and few if any rival, that of Mr. C. Reeves, of Birmingham, Eng., over whose works, with such efficient guides as Mr. Reeves and his son, says *Iron*, we shall now conduct our readers, in order that they may witness the making of a sword under the most favorable circumstances.

FORGING THE BLADE.

The first process is the forging of the blade. The steel comes from Sheffield in double molds, (the length of two blades), as it is called, and is the best steel, and is in strips, each strip being the length of two swords. The workman takes the strip and first breaks or cuts it across the middle. The handle end of the blade is of iron, as this metal bears more knocking about and can be used in a manner that would be fatal to steel. The iron end is then put in the fire, and the tang, or part to fit into the hilt, is forged. The blade is then passed through the fire a large number of times, and beaten out on the anvil in order to distribute the metal equally in every part. At the same time the furrow is worked up the center of the blade, wide or narrow according to the pattern and size required. In those known as Scotch blades two furrows are beaten. This is a work requiring great care and skill. The future worth of the blade depends upon the skill of the forger. The slightest defect or inequality in the distribution of the metal makes the blade to that extent imperfect. With a skillful workman this is, of course, of rare occurrence. He knows precisely the amount of hammering required. It may be noted here that every blade passes through the fire no fewer than twenty-five times before it is completely forged.

TEMPERING THE SWORD BLADES.

After forging follows the most delicate and important part in making a sword blade—tempering. On this process depends the perfection of the weapon, and it is quite pleasant to listen to Mr. Reeves while he descants on this part of the work. The object of tempering being, of course, to give the steel the required elasticity, it must not be too hard or it will break, and it must not be too soft or it will bend; but must be so equally tempered that, when its point is pressed on the ground, the blade will, when free, at once take its natural shape without hurt or detriment in the slightest degree. The mode by which this great, this necessary quality, is secured is as simple as it is effective. Before the blade can be tempered it must be made extremely hard; this is done by first passing it through the fire, and then, while hot, it is plunged into water. The first plunge hardens the blade to such an extreme hardness that it is as brittle as glass, and if thrown down would break into pieces. Again it is passed through the fire and then beaten straight, for the effect of the action of the water on the hot metal is to make it of all shapes. Just at the point at which the blade takes a particular color, known at once to the practiced eye, it is again plunged into the water which, in technical language, "prevents it going down lower," and is tempered. It can now be bent backwards and forwards without any fear of its breaking, and is ready for the grinder.

GRINDING THE SWORDS.

The grinding is done on the best Leeds stones, the blade being placed in a frame of wood, and its surface pressed on the stone until the work is done. This also depends upon the skill and the eye of the workman. In grinding the furrows, a stone of a peculiar construction is used. The face is cut into raised flutings of the size and shape of the furrows of different swords, and on these the blade is pressed, and the furrow effectually ground. This is called the hollowing stone. Each blade takes from an hour and a half to two or three hours grinding, according to its quality. We saw one blade ground, and also some matchets, a kind of scimitar knife used for cutting down sugar canes, etc, in India.

SWORD POLISHING.

The blade is now ready for polishing. This is done on lathes worked by steam. Different sized wheels are fitted on the spindle, and lard oil and double washed emery are used in the operation. The blade is often put into lime dust during the process; and on the lathe brush used, a crocus dust, of deep purple tint and ground very fine, is thrown over the brush, and a most brilliant polish is the result. Scab-

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bards and hilts, and other ornamental parts of the sword, are also polished in much the same manner. In the case of scabbards, a larger wheel is used instead of the ordinary lathe brushes. When polished, the blade is ready for the hilt and scabbard; so we will now see how these are made. And first for the scabbard.

MAKING THE SWORD SCABBARDS.

In making a scabbard, the workman takes a piece of flat steel cut to the required size. He first places it on the top of an open vise, and beats it with a wedge-shaped wooden mallet, bringing the two edges closer together each time it passes along the vise. It is then beaten on both sides until they almost meet; a mandrel is then put down it, and the steel beaten close round the mandrel, both edges being hammered over. The edges are then soldered. It is next beaten on an anvil all round, the mandrel is withdrawn, and the scabbard is ready for the drag, which is a piece of iron fitted to, and fastened on, the bottom of the scabbard. The bands are then put on, and the scabbard, after being filed and smoothed, is ready to be polished.

MAKING THE SWORD GRIPS.

The making of the grips is also a very interesting bit of work. These are the handles by which the sword is gripped, hence the name. A grip at first is a bit of walnut, oblong in shape, but narrower at the end than the top. The back, which is made of metal, is placed on it, and the wood is worked into the required shape by files. A large number of different shapes, sizes, and cutting powers are used in this work. When the top has been cut, the grip shaped, and the tenon for the ferrule made, it is then "balled." For this purpose it is fastened in a vise, a three-sided file cuts a deep indention at regular intervals, each division is rounded or balled by a file, and the indentions connected by slanting interstices cut by a handsaw. The grip is then drilled through in a lathe, for the purpose of receiving the tang. When this has been done, a piece of the skin of a dog fish, which has been a long time soaked in water, is cut off. Every bit of flesh on the inside of the skin is then carefully cut off, and a piece of pure skin is left. This is put round the grip, a piece of string or wire is fixed by a loop to a piece of steel fastened in the vise, and the workman binds the skin tightly round the grip by winding the string or wire round the space between each ball. It is then filed and the back fitted on again. In making a grip, it passes through the workman's hands no fewer than thirteen times.

DRESSING THE HILTS.

A hilt is at first a flat bit of metal of a peculiar shape, and may be cut to any pattern. A large number of these are used, which are all made to a regulation size. The pattern used is placed on the metal, which is then marked. They are then filed and cut by hand, beaten on blocks and knobs into the shape of the hand, and afterwards polished, and made ready to be fixed to the sword.

This is called mounting. In the cheaper swords, the blade is bought from one person, the hilt from another, the scabbard from a third, and so on. But in this manufactory every part is made in the works, and each piece is prepared to suit and fit the other parts, so that when fitted together the sword is firm and sound; and the parts never give way or become loose, as they do when stuck on to the tang of a blade without any reference to their weight or suitability for each other and the blade to which they are attached. In such cases the parts with little wear become loose and rickety, and depend only upon the small rivet at the top for their security. In ordinary swords the blades and hilts, after having been ground, filed, and polished, are taken into the mounting shop. There the tang is placed in the grip. The hilt is fastened on by passing a rivet into the top of the grip, and fastening it to the tang. The hilt is drawn over this rivet, which passes through a hole at the top. It is then filed and broken off at a short distance from the hilt. The rivet is then welted by being filed, and smoothed until it has the appearance of an ornamental knob, forming an integral part of the hilt. These swords are now complete. In the mounting of best work, great care and skill are required. In the mounting shop, a very ingenious tool is used, called a float. It is a long bit of steel, shaped almost like a tang, with a series of blades along its surface. The grip is worked to and-fro on the float until it is cut to the exact size and shape of the tang on which it is to be fixed. Great skill is required in this delicate operation. In this mounting room the swords are proved. This is done by placing the point of the blade on the floor, and bending it backwards and forwards. After it has stood this test, it is subject to another. The workman strikes the blade strongly on a wooden block, both on the edge and back, and can tell by the ring whether it is of true and perfect quality. By these tests the slightest fault or flaw would be detected, for a very small fault, indeed, would cause the blade to break.

The scabbards are lined. In the ordinary sword, two thin strips of wood of the shape of the scabbard are placed on either side, and they must fit so accurately that neither in drawing nor in sheathing the sword must the slightest obstruction be perceptible. In the better swords, leather is used in lining.

In the mounting and ornamenting of swords, any amount of artistic work can be employed either on the blade, the hilt, or the scabbard. The rank of the officer is indicated in this manner, and naval swords are ornamented differently to military. The work put on presentation swords is often most elaborate and expensive.

A NEW PAVEMENT, by Charles Pennington, of London, consists of a bed of concrete covered with an elastic layer, such as tar and tan bark. On this layer the blocks of stone are set, the crevices being filled with concrete.

A NEW SCIENTIFIC MUSEUM.

Operations have begun for the erection of the Peabody Museum in New Haven, which, when completed, will contain some of the largest and richest zöological, geological, and mineralogical collections in the world. The institution is founded under a bequest of $150,000 from the late George Peabody, and is designed to bear the same relation to Yale College as the present Museum of Comparative Zöology does to Harvard.

The building will consist of a central edifice and two wings. For the present, only one of the latter is to be erected, with a frontage of 115 feet on one street and 100 feet on another. It will cost $160,000. be built of brick with stone trimmings, fireproof, and contain, including basement four available stories.

The fourth story is assigned to archæology and ethnology, the third to zöology, the second to geology, the first to lecture rooms and mineralogical collections, and the basement to working apartments and a large class of heavy specimens, showing fossils, foot prints, etc.

The Brazilian Telegraph.

The great ocean cable between Lisbon, Portugal, *viâ* the Azores, and Rio Janeiro, Brazil, is now complete and open for business. The charges from New York to Rio Janeiro are about $2.50 per word. The message goes *viâ* England, and through some eight thousand miles of submerged cables. Complimentary messages have been exchanged between President Grant, the Emperor of Brazil, the President of the Argentine Republic, and the President of Uruguay.

Last year the section of the above cable between Lisbon and Madeira was broken, and so remained until the present summer, when the two ends were fished up, joined, and relaid. The depth of water at the place of fracture was 2,500 fathoms, or about 2½ miles deep, and the successful finding, raising, and joining of the broken ends at sea, shows the great perfection of mechanism and skill that has been acquired in ocean telegraph engineering.

Fast Trotting.

At the Buffalo, N. Y., races, August 7, the famous horse "Goldsmith Maid" trotted the mile in 2m. 15½s. After the race, the Maid was stripped and led in front of the judges' stand, when the immense crowd arose and greeted her with deafening cheers. Her driver, Budd Doble, was ordered on the judges' stand, where he received a becoming ovation. In 1867, the racer "Ethan Allen" trotted a mile in 2m. 15s. But both these performances were surpassed by one of "Goldsmith Maid's" three one mile heats at Rochester, N. Y., on August 12, which was trotted in 2m. 14¾s.

Running horses make much quicker time than trotters. In 1850, the English horse "Black Doctor" is reported to have run the mile in 1m. 40s.

The Chassepot as Altered.

Two years ago, the French government decided to adopt the metallic cartridge in its military equipments, and an official commission was appointed to ascertain the best plan for altering the Chassepot rifles, one million or more in number, so as to receive the new ammunition. The commission has just decided to adopt the plan of alteration proposed by M. Gras, Captain of Artillery. The altered Chassepots will have a range of from one and a half to two miles. At a range of one and a half miles, the bullet has force enough to flatten against an iron plate. The accuracy of fire is very satisfactory.

The August Meteoric Shower.

In the vicinity of New York, clouds obscured the heavens on the evening of August 10, and few observations of meteors were made. But we learn from a correspondent at Martha's Vineyard, Mass., that, near Edgartown, many beautiful meteors were seen.

DECISIONS OF THE COURTS.

United States Circuit Court.---District of Massachusetts.

BOTTLE FASTENER.—PATENT OF H. W. PUTNAM, GRANTED MARCH 15, 1859 AND EXTEDED FOR SEVEN YEARS, FROM MARCH 15, 1873.—HENRY W. PUTNAM *vs.* EPHRAIM D. WEATHERBEE, *et al.*

[Heard at Portland, Me., July 10, 1874.]

Shepley, Judge:

In the view which I take of the first claim of this patent, which is "forming the fastener at the part that comes over the cork of a piece of wire of U form, with the ends returned and connected to the bottle, in order that the pressure on the cork or stopper may cause the fastener to hold more securely, as specified," considering it in connection with the specification in the patent, it is not necessary that the wire which forms the U should be returned upon itself in a direction directly the reverse of that in which it is before the turn; but it is a sufficient compliance with the first claim of that patent if the wire, instead of being returned in a reverse direction from that which it had before, is returned at right angles, or approximately so, so as to be connected with the wire which encircles the neck of the bottle in the manner specified in the patent. In the construction which I give to this first claim there can be no question that the defendant's contrivance is an infringement. The only question, therefore, for consideration is whether the first claim of this patent be or be not a valid claim, and that question is one of significance, principally in its relation to the Allender contrivance. The Allender contrivance was considered by the Commissioner of Patents when this patent was granted. The disclaimer of the patentee clearly has reference to a contrivance like the Allender contrivance; and, taking that into consideration, the Patent Office granted the patent. It has since been sustained by the adjudications of several of the federal courts, it has been in existence a long time, and it has been renewed by the Patent Office after the expiration of the original term. Under these circumstances I think this is a clear case, in which the patentee is entitled to the presumption, *prima facie*, which his patent gives, aided as it is by the long enjoyment and by the adjudications of the courts, and is entitled to protection by a preliminary injunction.

In the construction which I give of the claim, the only defence which could be maintained would be to destroy the validity of the plaintiff's patent; and I think, when the patent has been in existence so long, has been renewed after a contest, and has been adjudicated in favor of the patentee by the courts, he is entitled to the benefit of it until the adjudication of some tribunal shall decide that his patent is invalid.

This case is pending in the Massachusetts district, and when the court is in session there, the order for a preliminary injunction will be issued.

I do not express any opinion as to the question which has been presented in the hearing on this case as to the validity of the issue of this patent, with reference to the existence of the Allender contrivance; but, as I have before said, I think the position in which the patent stands entitles the patentee, upon well established principles, to the benefit of the legal presumption in his favor until that question is decided.

[*W. H. Clifford* and *Thomas H. Dodge*, for complainant. *Benjamin F. Thurston*, for defendant.]

United States Circuit Court, Southern District of Ohio.

PATENT BOILER FURNACE.—GIDEON BANTZ *vs.* JACOB ELSAS *et al.*

[In equity.—Before Swing, J.—Decided June, 1874.]

SWING, Judge.

The bill in this case alleges that the complainant was the original and first inventor of an "improvement in boiler furnaces for burning wet fuel," for which he received a patent, June 22, 1858; that he surrendered said letters patent February 6, 1872, and obtained new letters patent therefor, which were afterward extended for seven years from June 22, 1872. The bill then prays that defendants may be compelled to account for and pay over the profits of the infringement, and may be enjoined from making, vending, or in anywise using the patented improvement.

It is claimed, by respondents, that there is no infringement, because the combustion chamber or reservoir of the complainant is one having a *cyma-reversa* bottom, with narrow throat, whereas the combustion chamber or reservoir of the respondents has not the *cyma-reversa* bottom, but has one which is flat and set inclined, and has a wide throat instead of a narrow one.

I think, however, that the leading idea of the complainant is found in a combustion chamber or reservoir arranged in its relations with the fire chamber and boiler, for a particular purpose, rather than in the particular form of the back or throat of such chamber or reservoir.

Decree for complainant.

[*John E. Hatch* and *Fisher & Duncan*, for complainant. *Jacob Schroeder*, for defendants.]

United States Circuit Court--District of Massachusetts.

PATENT TABLE TRAY.—LUCY A. DOHERTY, ADMINISTRATRIX, *vs.* JAMES G. HAYNES.

[In equity.—Before Clifford, Judge.—Decided May 29, 1874.]

CLIFFORD, Judge.

Letters patent were granted to Nathaniel Waterman, on May 12, 1863, for an invention consisting of an improved table tray or waiter, as fully described in the specification, and the record shows that the original letters patent were subsequently surrendered and reissued, as alleged in the bill of complaint, and that the complainant is the sole owner of the described invention, as secured in the reissued patent on which the suit is founded. Various defenses are set up in the answer, of which the following are the only ones which require to be noticed:

First. That the invention is not patentable.

Second. That the person named in the original patent, as the patentee, was not the original and first inventor of the improvement.

Third. That the reissued letters patent were fraudulently obtained in violation of the rights of the respondent, and that the patent as reissued "covers more that was contained" in the original patent.

Decree for complainant.

[*A. A. Ranney*, for complainant. *C. D. Wright*, for defendant.]

NEW BOOKS AND PUBLICATIONS.

AN ILLUMINATED HISTORY OF THE WORLD.

We have lately received an educational novelty, which, after examination, we can recommend to the notice of teachers and students as a valuable and useful aid to study. It is a chart, handsomely mounted and printed in colors, and in dimensions twenty-two feet long by thirty inches wide. Its aim is to teach the history of the world, biblical, ancient, mediæval, and modern, ranging over the entire period of human knowledge, from 4004 B.C. to 1874 A.D., or 5,878 years of historic time. The plan adopted, which is a very ingenious one, is to represent the progress of time by a continuous black line, which is divided into centuries, decades, and years. Parallel with this are other lines, or streams, representing nations, and the division or flowing together of these indicates conquests, foundations of new States, and similar events. The arrangement of the map is such that the student sees at a glance exactly the condition of the world at any given date; and by the aid of colors, pictures, and similar helps, he is given an idea of the progress of arts, names and succession of rulers, and similar facts important to be remembered. We need not point out the obvious utility of this remarkable production, since it is well known that, while a person may readily master the history of one people, he frequently, in taking up that of another nation, is at a loss to connect contemporaneous events, and hence the various records remain detached in his mind, instead of uniting to form a single and detailed history of mankind. With the chart under review, such a difficulty need not be encountered, since the student, while at work upon the history of a single nation, need only glance at the map to be informed at once as to what the rest of the world was doing during the periods passed over. The execution of the work is excellent, and indicates an immense amount of labor and research on the part of the author, which should not go unrewarded. The length of the map necessitates its mounting upon rollers and arrangement in a neat frame, in which it is hung against the wall so as not to occupy more than three feet of space, suitable cranks on the ends of the rollers allowing the chart to be unwound like a panorama. The author is Mr. S. C. Adams, of Cincinnati, Ohio. The price is $15.

MANUAL OF PATENT LAW, with an Appendix upon the Sale of Patents. By William Edgar Simonds, Counsellor in Patent Cases. Hartford, Conn.: Published by the Author.

A concise and useful little book, explanatory of the patent law and practice.

Inventions Patented in England by Americans.

[Compiled from the Commissioners of Patents' Journal.]

From July 22 to July 30, 1874, inclusive.

CORSET CLASP.—J. P. McLean, Brooklyn, N.Y.
ELECTRIC TELEGRAPH.—R. K Boyle, New York city.
ELECTRO-MAGNETIC GOVERNOR.—J. M. Bradford, Portland, Me.
FASTENING SEAMS.—J. W. Davis *et al.*, San Francisco, Cal.
FAUCET.—F. Roach, Boston, Mass.
MATTRESS.—G. N. Torrance (of Philadelphia, Pa.), London, England.
NEEDLE-THREADING HOOK.—H. Wells, Woburn, Mass.
OIL FROM PETROLEUM.—H. W. C. Tweddle (of N. Y. city), London, Eng.
PACKING FOR BOTTLES, ETC.—O. Long, Boston, Mass.
REAPING MACHINE.—W. A. Wood Company, Hoosick Falls, N. Y.
SAFETY LAMP.—B. Tappan, Steubenville, Ohio.
SOLAR COMPASS.—C. T. Pierson, Ramapo, N. Y.
SPECULUM.—E. D. Pape, New York city.
STEAM PUMP.—W. Atkinson, Gardner, Ill.
STEEL MANUFACTURE.—T. S. Blair, Pittsburgh, Pa.
TAPE WEAVING MACHINE.—F. F. Burlock, Birmingham, Conn.
TRANSMITTING MUSIC BY ELECTRICITY.—E. Gray, Chicago, Ill.

Recent American and Foreign Patents.

Improved Fireproof Roof.

Frederic J. Hoyt, Batavia, N. Y.—The object of this invention is to render the roofs of buildings in blocks, or where built close to one another, not only waterproof but fireproof. The ordinary flat roof is built on an incline from front to rear, and is covered with a waterproof composition. The front wall is extended a foot or more above the roof. The side walls and rear wall are brought to a level with the front wall, leaving spaces in the side walls near the top, for fitting in joists three feet apart, on which, from front to rear, strips of wood are fastened on edgewise, one fourth inch apart. This is covered with a waterproof composition, on top of which is placed two to three inches of loose gravel, screened so that none will pass through the openings into the lower roof. The water passing through this upper roof falls on the lower roof, and runs off by conductors arranged through the wall and into the lower roof in the ordinary manner, which also serve as air holes to ventilate the space between the two roofs.

Improved Lantern.

Daniel Lordon, Fremont Center, Mich.—The bottom of the lantern is made double, with a series of holes connecting with a hollow space for purposes of ventilation, a chamber beneath the wick chamber, and a tube, connected therewith, which passes upward through the globe. An oil tube on the globe connects the oil chamber with the wick chamber. A wick in the end of the oil tube may be adjusted to allow the oil to flow to the wick chamber fast or slow. There is an inverted funnel over an opening through the oil chamber connected with the tube by which heat is conducted down beneath the wick chamber. A strong current of heated air passes up through the opening, and is caught by the inverted funnel. The oil in the wick chamber is thus soon heated, and the burners consequently afford a clear and bright flame.

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