CENTENNIAL NOTES.

THE REMINGTON BUTTON HOLE MACHINE.

Among the thousands of curious machines seen by the visitors to Machinery Hall, one of the most novel is the Remington button hole machine. Since the advent of the sewing machine, many attempts have been made to produce something that would make a button hole, and usually such efforts have been directed toward an attachment for an ordinary sewing machine. So far as known, such efforts (either as an attachment or a complete machine) have been attended with only partial success; and until the production of the Remington machine no device for completely finishing a button hole has been a perfect success. This machine is complete in itself, being about the size of an ordinary sewing machine, but is made upon entirely new principles. The invention seems to be based upon the idea of a single thread as used in handmade work, forming a loop stitch exactly as made by hand, and which is concluded to be the only proper stitch for such work. A combined shuttle, bobbin, and needle is attached to the needle bar, resting in a socket in the latter. A hole of the required size is first cut in the material to be worked, then the latter is pushed upon a cone-shaped piece, and, by a movement of the operator's knee, is firmly clamped; and when once in position, it is automatically revolved around the cone, and does not require any manipulation to insure perfect work. The stitch is formed by a loop (taken from the needle after it has passed through the cloth) carried up and thrown over the shuttle and needle. When the cloth is taken from the machine, the button hole is found to be complete, the ends being strongly barred or stayed; and no handwork of any kind whatever is required.

The speed of this wonderful machine is from 1,800 to 2,000 holes in 9 hours' work: and judging by the rapidity and ease with which the work is handled, both by the machine and the operator, this large product seems easy of accomplishment. The range of work includes shirts, linen collars, knit goods, underwear, and many other classes of goods. The machine is simple in construction, durable, and not liable to get out of order.

A CORK WATER COOLER.

Cork, as is well known, is porous, and is a non-conductor of heat. These peculiarities have been taken advantage of in the manufacture of a water cooler made entirely of cork, which is displayed in the Spanish section, and represented below. It is made of a slab of the wood, bent round cir

cular heads of the same and bound with brass hoops. The porosity of the cork allows the water to percolate slowly to the surface, and there to cool in evaporating, while its non-conducting nature prevents the heat of the sun warming the water within.

Spontaneous Fracture of Glass.

A SINGULAR ACCIDENT.—A light of glass, eight feet square, slightly marred by an accident, was removed for a new one on King street, in Troy, the other day, and placed against the side of a building. Suddenly the glass flew into a thousand pieces. One of the fragments struck a workman, and penetrated the right leg of his pantaloons, and cut a deep gash in his knee. No cause can be assigned for the singular explosion. It was accompanied by a loud noise, which was heard some distance away.—*American Architect and Building News.*

REMARKS: This occurrence was doubtless due to the imperfect annealing of the glass. The *British Journal of Photography* says, on the detection of bad glass:

"We have more than once experienced, and, doubtless, many of our readers have similarly suffered, the loss of a large glass vessel through the occurrence of a crack, produced no one could tell how; but when, on one occasion, an unusually thick vessel fell to pieces before our eyes, though it had not been touched or heated for some days, the cause became plain to us. The fracture and the cracking arose from the imperfect annealing of the glass, which remained whole till some unnoticed vibratory impulse caused sufficient molecular disturbance to allow the stronger of the unequal strains existing in the mass to assert itself, and, overcoming the cohesion of the whole, to produce a crack or a complete fracture, according to its strength. To guard against such accidents, a suggestion has been made, by G. Hagenbach in *Poggendorf's Annalen*, to examine all articles by polarized light, when, if a hidden flaw exist, its presence will be revealed by the occurrence of prismatic colors. He was led to this discovery by the examination of some fragments of two glasses which had suddenly cracked in the unexpected manner we speak of; they all showed prismatic colors."

DECISIONS OF THE COURTS.

Supreme Court of the United States.

PATENT REFRIGERATOR.—BROWN & SEAVY, APPELLANTS *vs.* ENOCH PIPER.

[In the matter of the appeal from the Circuit Court of the United States for the District of Massachusetts.—Decided October, 1875.]

Mr. Justice Swayne delivered the opinion of the Court.

The patent of E. Piper, March 19, 1861, held by the court to be anticipated by the ice-cream freezer.

The claim to "preserving fish or other articles in a close chamber by means of a freezing mixture, having no contact with the atmosphere of the preserving chamber, substantially as set forth," when taken in connection with explanations contained in the specification, construed to be for the application to articles to be preserved of the degree of cold necessary to preserve them, by means of a "close chamber," in which they are to be placed, and "a freezing mixture, having no communication with the atmosphere of the preserving chamber."

The application of an old process to a new subject without any exercise of the inventive faculty, and without the development of any idea which can be deemed new or original in the sense of the patent law, is not patentable.

United States Circuit Court---District of Massachusetts.

PATENT PRESSING MACHINE FOR TAILORS.—GRANTED JUNE 8, 1858.—LEVI B. STORRS *vs.* PATRICK HOWE *et al.*

[In equity.—Before Clifford, J.—Decided September 2, 1876.]

In a suit for infringement of a patent the burden of proof is upon the plaintiff or complainant to show that the patentee was the first and original inventor of the improvement, and that the patent has been infringed by the party against whom the suit is brought.

The patent, if introduced in evidence, affords a *prima facie* presumption that the patentee is the original and first inventor, and, in the absence of proof to the contrary, is sufficient to entitle the party instituting the suit to recover for the alleged violation of his exclusive rights.

Equivalents are allowed in every class or description of inventions.

A combination of old ingredients is not infringed unless it appears that the alleged infringer made or used the entire combination.

Equivalents are such ingredients as will perform the same function as the one described, and which were well known at the date of the patent as proper substitute for the ones actually described in the patent.

Patent sustained.

[*Chas. H. Drew.* for complainant.
John S. Abbott, for defendants.]

United States Circuit Court---District of Massachusetts.

IRON-BRONZING PATENT.—HIRAM TUCKER *vs.* THE TUCKER MANUFACTURING COMPANY.

[In equity.—Before Clifford, J.—Decided September 1, 1876.]

Clifford, J.:

Inventors, if they desire to secure letters patent for their inventions, must apply to the Commissioner therefor, in writing, and the requirement is that they shall file in the Patent Office a written description of the invention, and of the manner and process or making, constructing, and using the same, in such full, clear, concise, and exact terms as to enable any person skilled in the art or science to which it appertains to make, construct, and use the invention. (16 Stat. at Large, 201.)

Pursuant to that provision the complainant in this case applied in writing to the Commissioner for a patent, describing his invention as a new and improved process or method of superficially bronzing or coloring iron, as more fully set forth in the specification of the patent. Iron, he asserts, has heretofore been japanned by covering its surface with oily solutions of asphaltum and pigments, and by the subsequent application of heat sufficient to produce hardness; and he also admits that metals have been lacquered or bronzed by the application of a solution of resin and metallic powders or salts, dried by exposure to air or heat. Both of these operations, he admit, are old and well known. Instead of that, his invention, as he alleges, consists in a process of covering iron with a very thin coating of oil, and then subjecting it to heat, the effect of which is to leave upon the iron a firm film, which is very durable, and which gives the iron a highly ornamental appearance, like that of bronze. Exact and complete description is given in the specification of the steps to be taken in applying the process so as to effect the described result. Three directions of the kind are given as follows:

1. That the surface of the iron to be bronzed shall be cleansed from sand, scales, or other foreign matter, and where fine effects are desired the suggestion is that the surface should be polished or made smooth.

2. That the surface of the iron so prepared should be covered with a very thin coating of linseed oil, or some equivalent oil, and the suggestion of the patentee in that regard is that he attains such a coating by applying the oil with a brush, and then rubbing the oiled surface thoroughly with a rag, sponge, or other suitable implement.

3. That the iron so prepared and oiled should be placed in an oven and exposed to heat of an intensity sufficient to change a brightened surface of clean unoiled iron to a color varying from that of light straw to deep blue, until the required bronze color is developed upon the iron, the suggestion of the patentee being that the resultant shade of color will depend very much upon the degree of heat employed, as well as upon the duration of its application, which, in every case, may depend upon the skill, care, and judgment of the operator, both in the application of the oil and in regulating and determining the degree and duration of the heat. Boiled linseed oil is preferred by the patentee, and he directs that the iron, when the desired shade of bronzing is obtained, be removed from the oven or furnace; and he suggests that the process of oiling and heating may be repeated with profit if it be desired to deepen the shade of the bronzing, it being understood that the effect of each repetition will be to deepen the shade until the color becomes black. High heat, the patentee states, when applied to unoiled iron, will have the effect to produce upon the surface of the iron the series of colors pointed out in the specification, but he asserts that a thin coating of oil applied as directed before heating the iron has the effect to modify the oxidation and to produce a new and improved surface resembling bronze, and which is highly ornamental and of character to resist the effects of moisture and handling. Exhibits showing the practical results of the patented process were given in evidence at the final hearing, and they are abundantly sufficient to prove that the described steps are respectively essential to attain successful results, or, in other words, that it is essential that the surface of the iron should be cleansed from sand, scales, or other foreign matter, that the surface should be covered with linseed oil or its equivalent, unmixed with pigment, lacquer or japan, that the coating should be extremely thin, and that the iron thus prepared and oiled should be placed in an oven or furnace and be subjected to a high degree of heat.

Exact description of the invention is required to accomplish three great ends: 1. That the Government may know what they have granted and what will become public property when the term of the monopoly expires. 2. That licensed persons desiring to practise the invention may know, during the term, how to make, construct, and use the invention. 3. That other inventors may know what part of the field of invention is unoccupied. Sufficient appears to show that the description of the invention given in the specification constitutes a full compliance with those several requirements. Discussion of the title of the complainant is unnecessary; as it is admitted in the answer filed by the respondents, and the complainant alleges that the respondents have, since they have reassigned the patent to the complainant, infringed his exclusive right and privilege to make and use the invention and to vend the same to others to be used; and he prays for an account of all gains and profits realized by the respondents from the unlawful use of the same, together with the damages suffered by the complainant by reason of such unlawful use, and for an injunction.

Process was served, and the respondents appeared and filed an answer, in which they deny the charge of infringement and set up four other defenses; 1. That the reissued patent on which the suit is founded is not for the same invention as the original. 2. That the process described in the specification was not the subject-matter of invention at the time the original patent was granted. 3. That the complainant is not the original and first inventor of the described improvement. 4. That alleged invention was known to, and was used by, the persons named in the answer before the complainant applied for a patent. *

On the 15th of December, 1863, the original patent was granted to the complainant; on the 3d of March, 1865, he assigned the same to the respondents; on the 11th of September, 1866, the original patent was surrendered and was reissued to the respondents as the assignees of the complainant; the respondents, on the 27th of August, 1872, reassigned the invention as secured by the reissued patent to the complainant. Throughout that period, to wit, from the 3d of March, 1865, to the 27th of August, 1872, it appears that the respondents held the title to the invention as secured by the original and reissued patent, and it appears that they, during that time, manufactured quantities of goods by the process described in those patents, and that they paid royalties to the complainant for the right to use to process, and that throughout that whole period they acknowledged the validity of the patented invention.

None of those matters are in controversy, but the charge is that respondents, since they reassigned the patented invention to the complainant, having unlawfully continued to use the same without license, and have refused to pay any royalty to him for such, or to acknowledge his legal and just rights under the letters patent. Suffice it to say that the proofs fully establish that charge, and show that the respondents went immediately to work to see if they could not effect the same results as those accomplished by the patented process without infringing the same, and they now contend that they have been successful in their efforts. Instead of that, the court is of the opinion that they plainly infringed the patented process, that the attempt to avoid the charge of infringement is merely colorable, and that the complainant is clearly entitled to an account and to an injunction. *

[*Chauncey Smith, Walter Curtis*, and *Charles M. Reed*, for complainant.
George L. Roberts, for defendants.]

STITCHING HAT LININGS.—GLOVER SANFORD *et al. vs.* MERRIMAC HAT COMPANY.

[In equity.—Before Clifford, J.—Decided September 2, 1876.]

Clifford, J.:

Patentable inventions pertaining to machines may be divided into four classes: first, entire machines, as a car for a railway, or a sewing machine; second, separate devices of a machine, as the colter of a plow, or the divider of a reaping machine; third, new devices of a machine in combination with old elements, all embraced in one claim, or with separate claims for what is new, together with a claim for the new combination of all the elements; fourth, devices or elements of a machine in combination, where all the devices or elements are old.

What the assignor of the complainants professes to have invented is a new and useful improvement in sewing machines; and he states in the specification that the invention is designed for the purpose of stitching the sweats or leather linings into hats; and that the invention consists in the peculiar form of the work plate, with a guide for the sweat and a guide for the hat, combined with a sewing machine or stitching apparatus. *

The court is of the opinion that the invention consists of the work plate, the two guides, constructed and arranged as described, in combination with a sewing machine or stitching apparatus. Construed in that way, it is very clear that the respondents have not infringed the complainants' letters patent, as they do not use the guide for the hat. Where the invention consists entirely in a new combination of old elements or ingredients, the law is well settled that a suit for infringement cannot be maintained unless it appears that the respondent has used all of the elements or ingredients of the new combination. (Prouty *vs.* Ruggles, 14 Pet., 341; Vance *vs.* Campbell, 1 Black, 428; Gould *vs.* Rees, 15 Wall., 193. Seymour *vs.* Osborne, 11 Id., 555.)

Patents may doubtless be granted for a new device, and for the same in combination with old elements, and if both inventions are properly described and claimed, the patent will be valid for both; but it is not necessary to pursue that inquiry in this case, as the court is of the opinion that neither the description of the supposed improvement nor the claim of the patent in question brings the case before the court within that rule. Infringement not being proved, the bill of complaint must be dismissed.

Decree, that bill of complaint is dismissed.

[*Edward Avery*, for complainants.
Wm. W. Swan, for defendants.]

PATENT BILLIARD TABLE.—HUGH W. COLLENDER *vs.* JOHN E. CAME *et al.*

[In equity.—Before Clifford, J..—Decided September 2, 1876.]

A patent, in due form, was granted to the complainant on January 12, 1858, for a new and useful improvement in uniting comparatively hard substances to elastic foundations of billiard cushions, and that the same was surrendered on March 19, 1867, on account of a defective specification, and reissued to the same patentee for the same invention. Due application was subsequently made for an extension, and the record shows that the reissued patent was subsequently extended for the further term of seven years from the expiration of the first term. Gains and profits, it is charged, have been made by the respondents by infringing the exclusive right secured to the complainant by the said reissued patent, and he prays for an account and for an injunction. Process having been issued and service made, the respondents appeared and filed an answer. They deny that they have made, used, or sold cushions for billiard tables in accordance with the specification of the complainant's patent, or that they have made any gains or profits by infringing the exclusive right accured to him, as charged in the bill of complaint, and for defense upon the merits they allege the patentee is not the original and first inventor of the improvement, but that the same had been previously described in the specification of the foreign patent referred to in the answer, and that it was known to and had been used by the persons therein named, and at the places specified in the answer. *

The claim of the patent is:

An india rubber billiard cushion constructed with an imbedded spring band, having woven about it light and close-fitting fibrous casing or covering, as described, for the purpose specified.

Mechanical differences undoubtedly exist, but the general mode of constructing the two cushions is the same, as more fully appears by comparing the manufacture of the respondents with the machine of the complainant, as described in the specification of his patent. Compared in that way, the conclusion must be, in the opinion of the court, that the charge of infringement is satisfactorily proved.

Decree for an account and for an injunction.

[*James E. Maynadier*, for complainant.
George L. Roberts and *Reuben L. Roberts*, for defendants.]

NEW BOOKS AND PUBLICATIONS.

CHOKE BORE GUNS, AND HOW TO LOAD FOR ALL KINDS OF GAME. By W. W. Greener, Author of "Modern Breech Loaders." New York city: Cassell, Petter, and Galpin.

Mr. Greener, a well known gunmaker of Birmingham, England has introduced into that country the American practice of contracting the muzzles of fowling pieces, so as to deliver the pellets of shot in a compact mass, to ensure longer range and greater penetration. The system has met with great success there, not only in the field, but in shooting matches and in competitive trials. Mr. Greener has written an excellent handbook of the improved weapon; and he gives accounts of its proved efficiency which are conclusive and convincing. His remarks on the choice of a gun and care in its use are practical and sensible; and he gives our country full credit for the valuable invention which he has improved on and introduced into England. We recommend his book to all lovers of field sports.

AN ELEMENTARY HANDBOOK OF APPLIED MECHANICS. With Eighty-eight Diagrams. AN ELEMENTARY HANDBOOK OF THEORETICAL MECHANICS. With One Hundred and Forty-Five Diagrams. By William Rossiter, F.R.A.S., etc. Price 75 cents each. New York city: G. P. Putnam's Sons, Fourth avenue and 23d street.

Our readers have frequently read our criticism on the various numbers of Messrs. Putnam's two "Science Series," elementary and advanced. All the treatises selected for publication in this cheap and popular form are of the highest excellence; and the two now before us are full of condensed, intelligible, and accurate information, given to the reader in a strictly progressive and inductive manner. Books such as these are wanted to answer the demand for practical education, now so loudly heard in all our trades and handicrafts.

THE COMPENDIUM OF ARCHITECTURAL SHEET METAL WORK, with Rules and Directions for Estimates, etc. Price $10. Salem, Ohio: The Kittredge Cornice and Ornament Company.

This is one of the most elaborate trade handbooks we have ever seen. It contains over 550 pages of tables of proportions, dimensions, and prices of all kinds of ornamental metal work, and is lavishly illustrated with diagrams, etc. It is likely to be very useful to architects and builders employing sheet metal decorations. The Kittredge Company's price catalogue is distinct from the technical information and tables; and the latter afford means for ascertaining, by a simple plan of analysis, the complete and exact cost of every description of work.

THE TEXTILE COLORIST, No. 10, Volume II. Published Monthly. Subscription Price, $12 a year. New York city: John Wiley & Son, 15 Astor Place.

This valuable periodical maintains its high character as the standard authority on bleaching, dyeing, and printing textile fabrics. The complete volumes form handsome and elaborate treatises on the whole art and science of dyeing.

Inventions Patented in England by Americans.

[Compiled from the Commissioners of Patents' Journal.]

From September 5 to October 4, 1876, inclusive.

ABDOMINAL SUPPORT.—J. Herts, New York city.
AIR CURRENT.—J. Y. Smith (of Pittsburgh, Pa.), Leamington, England
AXLE AND BOX.—J. F. Pray *et al.*
CANCELING STAMPS, ETC.—T. G Palmer, Shultzville, N. Y.
CLOSING DOORS, ETC.—J. T. Foster, Jersey city, N. J.
FLUTING MACHINE.—A. Rose, New York city.
GLOVE.—W. F. Foster, New York city.
HOSIERY.—G. W. Gregory, Boston, Mass.
INSECT FAN.—S. W. Lambeth *et al.*, Philadelphia, Pa.
KNITTED FABRIC.—C. H. Landerberger, Philadelphia, Pa.
LEATHER-BEVELING TOOL.—J. Smith *et al.*, Boston, Mass.
LUBRICATOR.—T. Haynes, Kansas, Mo.
MAKING SUGAR.—D. M. Weston, Boston, Mass.
MINING MACHINERY.—P. Sheldon, Jamestown, N. Y.
PAPER BAG MACHINE.—G. H. Mallary, New York city.
PAPER BARREL, ETC.—W. H. Murphy, Syracuse, N. Y.
PAPER BARREL HEAD.—W. H. Murphy, Syracuse, N. Y.
PISTON PACKING.—Adair Packing Co., Bowling Green, Ky.
PRINTING AND CUTTING MACHINE.—W. Heckert, Providence, R. I.
PULP BOX MACHINE, ETC.—S. Wheeler, Albany, N. Y.
PURIFYING OIL, ETC.—G. W. Tilton, New York city.
RAILWAY SIGNAL.—F. W. Brierley, Philadelphia, Pa.
REDUCING ORES, ETC.—A. T. Hay, Burlington, Iowa.
REFRIGERATOR.—E. B. Smith, Albany, N. Y.
ROCK DRILL, ETC.—W. Weaver, Phœnixville, Pa.
SEWING LEATHER, ETC.—E. Drake, Stoughton, Mass., *et al.*
SEWING MACHINE.—J. Butcher, New York city.
SEWING MACHINE, ETC.—R. Whitehill, New York city.
SEWING MACHINE SHUTTLE.—J. Butcher, New York city.
SEWING MACHINERY.—J. Folk, Brooklyn, N. Y.
SPOOL-PRINTING MACHINE.—I. Dimock, Hartford, Conn.
STONE SAW, ETC.—R. S. Robertson, Pittsburgh, Pa.
STOVE, ETC.—J. J. Jarves (of Boston, Mass.), Florence, Italy, *et al.*
TEACHING SINGING.—G. N. Carrozzi, Chicago, Ill.
TIE BUCKLE.—H. W. Oliver, Jr., Pittsburgh, Pa.
TROUSER PROTECTOR.—J. H. Anderson, New York city.
VENTILATING SHIPS, ETC.—W. F. Thiers, New York city, *et al.*
WINDING YARN, ETC.—I. L. G. Rice *et al.*, Cambridge, Mass.