

51,774.—Apparatus for Graining Wood.—Robert A. Adams, Chicago, Ill., assignor to himself and Edwin Lee Brown, of the same place. Antedated Dec. 13, 1865.

First, I claim the hollow elastic air bag or drum to be used in a graining machine, in the manner and for the purpose substantially as above described. Second, The combination of the said endless graining belt and elastic air bag used and operating for the purpose and in the manner substantially as above described.

51,775.—Method of Preventing Incrustation in Steam Boilers.—Wm. Brown, Morrison, Ill., assignor to M. G. and F. H. Jacobs, of the same place.

First, I claim in the construction of the filter the space left above the tops of the partitions, F G and H, and the cover for the free passage of steam from the cylinder into the filtering compartments, B C and D, for the purpose of heating the water, as herein set forth and described.

51,776.—Manufacture of Lenses for Spectacles.—Charles Buckley, West Meridian, Conn., assignor to Charles Parker, of the same place.

I claim forming the lenses by casting the blanks therefor in molds which will give to the edge of the blank the exact form and finish which it is desired that the edge of the lens shall have, and finishing the lens by grinding and polishing the faces of the blank, substantially as set forth.

51,777.—Animal Trap.—G. E. Clarke, Racine, Wis., assignor to himself and Sylvester Bullen, of the same place.

I claim the combination of the pivoted bar, H, levers, b, F, K, d, d, connecting bars (E L), and doors, D D, when arranged as and for the purposes specified.

51,778.—Elastic Syringe.—Herman E. Davidson, Gloucester, Mass., for himself, and as administrator of the Estate of C. H. Davidson, deceased, late of Charlestown, Mass.

I claim the improved elastic syringe bulb having flexible pipes made of one piece therewith.

51,779.—Machinery for Grinding Knives.—William Foster, Meriden, Conn., assignor to The Meriden Cutlery Co., of the same place.

I claim a cylinder arranged with fixed matrix or matrices revolving in the manner substantially as described, in combination with the bearings L, cam wheels, K, and the projections thereon, constructed and arranged to operate substantially in the manner and for the purpose described.

51,780.—Turn-out Wagon Seats.—George Gregory, New Haven, Conn., assignor to Lawrence, Bradley and Pardee, New York City.

I claim the above described construction and arrangement of a turn-out seat, for wagons or other vehicles substantially as, and for the purpose set forth.

51,781.—Manufacture of Artificial Leather.—W. W. Waite, South Natick, Mass., assignor to Flax, Leather Manufacturing Co., Boston, Mass.

I claim as a new article of manufacture an artificial leather made of animal and vegetable material combined, substantially as set forth.

52,782.—Postage Stamps, Etc.—George W. Bowsley, Monroe, Mich.

I claim the combination of the postage stamp by tearing a portion of it by the postmaster before it enters the mails.

51,783.—Portable Hog Scalding.—Arthur Clarke, Philadelphia, Penn.

First, I claim the combination of the table, C, and roller, D, with the boiler, B, arranged and operating substantially as set forth.

REISSUES.

2,134.—Door Bell.—H. H. Abbe, Chatham, Conn. Patented July 11, 1865.

I claim the employment or use in a door bell or gong of a lever or clapper stem, operated under the pull by a grooved slide or other suitable mechanism, having a spring attached to it whereby the lever or clapper stem, although operated after the pull by the spring is not directly connected with the latter.

2,135.—Corn Planter.—John H. Alexander and David R. Alexander (assignors by mesne assignments of John Gross), Decatur, Ill. Patented June 6, 1865.

I claim, first, The employment or use of four seed holes, b, in seed plate, K, from which the seeds are discharged consecutively while the remaining holes are being filled or charged, substantially as and for the purpose described.

Second, The employment or use of circular intermittently rotating plates, N, provided with openings or holes, J, in combination with the vibrating seed plates, K, substantially as and for the purpose specified.

Third, The vibrating bars, O, placed below or underneath the plates, N, connected with the plates, H, and receiving their motion therefrom, and provided with pawls, M, for the purpose of operating the plate, N, as set forth.

Fourth, The circular gages, P, placed underneath the plates, N, as arranged substantially as shown for graduating the capacity of the holes, b, in the plates, K, as set forth.

2,136.—Meat Mincer.—Albert W. Hale, New York City. Patented March 15, 1859.

I claim, first, The use and application of a flanged cylinder or cylinders, having the grooves between the flanges tapering and diminishing in depth, substantially as set forth.

Second, The use and application of a cylinder or cylinders having spiral flanges with grooves between them diminishing or tapering in depth, substantially as set forth.

Third, The combination of two cylinders with spiral flanges so arranged that the flanges of one cylinder overlap those of the other, so that the cylinder operated by the power or crank will give motion to and rotate the other without the interposition of other gearing.

Fourth, The combination of a cylinder or cylinders having spiral flanges or tapering grooves with a shearing knife, and a case having spiral ribs on its inner surface, substantially as set forth.

2,137.—Cotton Picker.—George A. Howe, Brooklyn, N. Y. Patented Dec. 4, 1855.

I claim, first, In a hand cotton harvester, an endless toothed chain, with a rotary motion, to detach and gather the cotton boll from the boll, substantially as described.

Second, The endless toothed chain or gatherer, F, in combination with an exterior case or frame, A, or stripper, H, and a bag or other receptacle, B, constructed and arranged substantially as and for the purposes described.

2,138.—Cotton Picker.—George A. Howe, Brooklyn, N. Y. Patented Dec. 4, 1855.

I claim a toothed chain, constructed substantially as herein described.

2,139.—Punching Press.—Norman C. Stiles, Meriden, Conn. Patented Jan. 26, 1864.

I claim, first, The compound eccentric, D, consisting of an eccentric wrist pin, a, adjustable disk, b, and clamp, d, or its equivalent, constructed and operated in the manner and for the purpose substantially as set forth.

Second, The V-shaped faces, g, on the slide, E, in combination with the laws, G, cast solid with the stock, A, and with the triangular gib, h, all as and for the purpose specified.

Third, The touch-off device, k H, arranged in combination with clutch pin, m, substantially as shown and described, so that said clutch pin is thrown in either direction by the direct action of the cam.

Fourth, The loose clutch pin, m, applied in combination with the band wheel, C, and shaft, B, in the manner and for the purpose substantially as specified.

Fifth, The button on the shaft, B, in combination with the spring catch, k, clutch pin, m, and n, and cam, H, arranged substantially as described, so that the cam is released automatically after the punch or cutter has completed his stroke.

Sixth, The yielding coupling pin, p, in combination with the clutch pin, m, and touch-off device, k H, constructed and operating in the manner and for the purpose substantially as specified.

Seventh, The yielding fulcrum pin, j, arranged in combination with the cam, H, clutch pin, m, and band wheel, C, substantially as and for the purpose set forth.

DESIGNS.

2,234.—Design for a Fan.—Gustavus Anton (assignor to himself, Jacob Hirner and F. Brurein), Philadelphia, Pa.

2,235.—Design for a Masonic Group of Statues.—William Christiaensen, New York City.

2,236.—Design for a Floor Oil Cloth.—James Paterson, Elizabeth, N. J. assignor to Edward Harvey, Brooklyn, N. Y.

2,237.—Design for a Hasp Hook.—Samuel M. Richardson, New York City.

2,238.—Design for a Trade Mark.—William P. Weyman and Benjamin F. W. Weyman, Pittsburgh, Pa.

THE FOLLOWING PATENTS BEAR DATE DEC. 19, 1865.

51,568.—Manufacture of Paper.—John W. Dixon, Philadelphia, Pa.

I claim the process of treating wood or other vegetable substances by boiling in soda ash (carbonate of soda) under pressure as a process or preparatory process for making pulp for the manufacture of paper from wood, straw, or other vegetable fibrous substances, substantially as described.

51,569.—Process for Bleaching Paper Pulp.—John W. Dixon, Philadelphia, Pa.

I claim, first, The process of bleaching pulp by the action of a solution of chlorine or chloride of lime at a high temperature and under pressure.

Second, Circulating the bleaching solution through the mass to be bleached, in the vessels which are highly heated, and under pressure by means of a pump or its equivalent, substantially as above described.

Third, I claim pulping, washing and bleaching wood, straw or other vegetable fibrous material, in the same digester, under pressure.

51,570.—Manufacture of Paper Pulp.—John W. Dixon, Philadelphia, Pa.

I claim the process of treating wood or other vegetable substances by boiling in a solution of chloride of lime or chlorine, in highly heated water under pressure, as a process or preparatory process for making pulp for the manufacture of paper from wood, straw, or other vegetable fibrous substance, substantially as described.

51,571.—Manufacture of Paper Pulp.—John W. Dixon, Philadelphia, Pa.

First, I claim the combination of a pump, P, to force highly heated fresh water into and through the wood or other material contained in a digester with a strainer and an exit pipe for the escape of water at the bottom of the digester, strained from the woody fiber.

Second, The combination of a pump, P, for forcing heated fresh water into the digester containing the material to be pulped by highly heated water under pressure with a coil, R S T N, or equivalent heating apparatus to heat the fresh water thus forced into the digester.

Third, The combination of the pump, P, for forcing fresh water into the digester containing the vegetable fibrous material to be pulped by highly heated water under pressure, with the intermediate heating boiler, K, or its equivalent, in which the fresh water is heated by the escaping effete water from the digester.

Fourth, The combination with the digester, A, of the pump, P, for forcing fresh water into and through the material in the digester to be pulped by highly heated water under pressure, the heating tank, K, or its equivalent, and the coil, R S T N, or its equivalent, for further heating the incoming fresh water.

51,572.—Process for Making Paper Pulp.—John W. Dixon, Philadelphia, Pa.

I claim the process of treating wood or other vegetable fibrous substances by boiling in a solution of caustic lime, under pressure as a process or preparatory process for making pulp for the manufacture of paper from wood, straw or other vegetable substances, substantially as described.

61,573.—Process for Making Paper Pulp.—John W. Dixon, Philadelphia, Pa.

I claim the process of treating wood or other vegetable fibrous substances by boiling in a solution of caustic lime, under pressure as a process or preparatory process for making pulp for the manufacture of paper from wood, straw or other vegetable substances, substantially as described.

61,574.—Process for Making Paper Pulp.—John W. Dixon, Philadelphia, Pa.

I claim the process of treating wood or other vegetable fibrous substances by boiling in a solution of caustic lime, under pressure as a process or preparatory process for making pulp for the manufacture of paper from wood, straw or other vegetable substances, substantially as described.

61,575.—Process for Making Paper Pulp.—John W. Dixon, Philadelphia, Pa.

I claim the process of treating wood or other vegetable fibrous substances by boiling in a solution of caustic lime, under pressure as a process or preparatory process for making pulp for the manufacture of paper from wood, straw or other vegetable substances, substantially as described.

61,576.—Process for Making Paper Pulp.—John W. Dixon, Philadelphia, Pa.

I claim the process of treating wood or other vegetable fibrous substances by boiling in a solution of caustic lime, under pressure as a process or preparatory process for making pulp for the manufacture of paper from wood, straw or other vegetable substances, substantially as described.

61,577.—Process for Making Paper Pulp.—John W. Dixon, Philadelphia, Pa.

I claim the process of treating wood or other vegetable fibrous substances by boiling in a solution of caustic lime, under pressure as a process or preparatory process for making pulp for the manufacture of paper from wood, straw or other vegetable substances, substantially as described.

61,578.—Process for Making Paper Pulp.—John W. Dixon, Philadelphia, Pa.

I claim the process of treating wood or other vegetable fibrous substances by boiling in a solution of caustic lime, under pressure as a process or preparatory process for making pulp for the manufacture of paper from wood, straw or other vegetable substances, substantially as described.

the production of porcelain pictures will be found very simple and interesting. Buy your apparatus from the first establishment whose advertisement you find in the SCIENTIFIC AMERICAN.

J. H. W. asks:—"Suppose a man has two patents, both designed to accomplish one object, but one or either can be used independently, can he sell one for any special purpose, and yet reserve the use of it for other purposes?" ANS.—Yes. "Suppose a man has one patent adapted to two or more different purposes, as for example, a furnace which may be used by a tinner, and also by a blacksmith, can he sell the right for the use of one mechanic and reserve the right to himself to sell for other purposes?" ANS.—Yes.

J. F. asks:—"If one or more of a certain person's claims, in a combination patent, can be used by another party in another combination for the same purpose, or for another purpose, can it be done without first obtaining consent?" ANS.—We do not fully understand the above inquiry. What do you mean by a combination patent? No person can use a patented device without the consent of the owner of the patent.

J. H., of Kansas.—A good "dip" for cast brass is sulphuric acid, 1 qt.; nitric acid, 1 qt.; water, 1 qt. Gold lacquer for undipped brass is alcohol, 4 gals.; turmeric, 3 lbs.; gamboge, 3 oz.; sandarach, 7 lbs.; shellac, 1 1/2 lbs.; turpentine varnish, 1 pint. Green bronze dip is wine vinegar, 2 qts.; verditer green, 2 oz.; sal ammoniac, 1 oz.; salt, 2 oz.; alum, 1/2 oz.; French berries, 8 oz.—boll together.

E. C., of Pa.—A horse-power is the power that will raise 33,000 lbs. one foot in each minute; 33,000 lbs. of water falling one foot in each minute exerts one horse-power. A cubic foot of water weighs 62 1/2 lbs. To get the horse-power of a stream, therefore, multiply the number of cubic feet which flow in a minute by 62 1/2, and by the height of the fall in feet, and divide by 33,000.

G. L.—If you correspond with the advertisers of the mills which, from time to time, you see in the SCIENTIFIC AMERICAN, you will get the information you desire.

W. T., of S. C.—British subjects can obtain patents on the same terms as American citizens.

T. H. Mc. asks:—"If an inventor assigns an invention to another party, on condition of receiving a certain sum when the patent is issued, and if the assignee transfers the invention to a third party, whose interest it is not to have the patent issue, can the inventor apply independent of the other parties and take out the patent?" ANS.—Yes. It is not new to attach runners to wheeled vehicles, as you propose.

D. F. W., of R. I.—We have found ground slippery elm very efficacious in preventing scale, such as forms in your boilers. Try it. The scale you send us seems to be chiefly mud. You might prevent the scale from entering the boiler by putting fine brush wood on your heater. The scale will form in a great measure on this rubbish, and thus purify the water before entering the boiler.

W. P. B., of Wis.—For your varnish receipt see another column. A good hygrometer indicates the degree to which the air is saturated with moisture, but it would require a long series of observations to determine the relation of such saturation to changes in the weather, and we are not aware of any such series of observations having been made.

C. R. A., of Pa.—You will find minute directions for making an electrical machine in "Silliman's Philosophy," and in some cheaper school philosophies.

A. C. T., of N. Y.—There are schools of mines now connected with Harvard, Yale, and Columbia Colleges, but we know of no college in which mechanical engineering is taught as a separate course.

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J. R. W. asks:—"Will you have the kindness to state the best apparatus for an amateur photographer; also the best process?" ANS.—For an amateur the best instrument will be a stereoscopic, so that stereoscopes can be taken, or single pictures. An amateur should commence with the wet process, which is that commonly practiced in the galleries, and after becoming familiar therewith, take up the various dry processes, of which the tannin process is the best. In either process the first thing to be learned is to make negatives. Then comes printing. In the latter branch

THE GREAT PARIS EXPOSITION OF 1867.

TO THE MANUFACTURERS, MECHANICS, INVENTORS, PRODUCERS, ENGINEERS, ARCHITECTS, ARTISTS, AND SCIENTIFIC AND EDUCATIONAL ORGANIZATIONS OF THE UNITED STATES

OFFICE OF THE UNITED STATES AGENCY OF THE EXPOSITION, No. 5 Spruce street, Tribune Building, and No. 40 Park Row, Times Building, New York.

The undersigned, having been appointed by the Secretary of State to the above-named agency, and being desirous of the co-operation of his countrymen in his efforts to make as complete, interesting, and creditable as possible the representation of our country at the great exhibition, adopts this method of conveying to them information and suggestions upon the subject.

In compliance with a request made through our Minister at Paris the time for filing applications from the United States has been so far extended that all which reach the undersigned before the 20th of January next may be in season: When examined and considered, the decisions will be duly made known.

Parties wishing to exhibit are requested to apply immediately to the undersigned for correct forms of application and instructions, inclosing postage stamps for reply.

Articles accepted should be delivered at New York prior to Jan. 31, 1867.

Accepted articles will be shipped from New York to Paris and returned at Government expense, if the expected necessary action of Congress obtains.

To prevent unnecessary trouble, it should be understood that it is a primary object to make the representation of the United States as complete as possible in all the groups enumerated below, and that it will therefore be necessary to select representative articles in every group, rather than accept an excess in any one.

In order to secure the universality of character above indicated, it is suggested that in each city or neighborhood those classes of manufacturers, artisans, and others who produce articles for very general use or consumption, should, without any delay, agree among themselves as to the specimens for which space should be applied for.

Every effort should be made to bring forward new and useful mechanical inventions, combinations and fabrics, and pains should be taken to have all articles neatly and thoroughly finished and prepared for exhibition.

The selections of products will be limited in quantity to the area they are to occupy; but in variety and character they should comprise a full and fair representation of American products, industry, arts, and science.

In each section assigned to exhibitors of the United States, the objects exhibited will be divided into ten groups, namely:—

- GROUP 1—Works of art.
GROUP 2—Materials and applications of the liberal arts.
GROUP 3—Furniture and other household articles.
GROUP 4—Clothing (including cloths) and other wearing apparel.
GROUP 5—Mining, rough and wrought products of the mechanical arts.
GROUP 6—Instruments and processes of the mechanical arts.
GROUP 7—Food, fresh and preserved, in its various states.
GROUP 8—Live agricultural products and specimens.
GROUP 9—Natural horticultural products and specimens.
GROUP 10—Objects especially exhibited for the purpose of improving the physical and moral condition of the population.

Applicants will please indicate in a note appended to the application:—

- 1. If it is desired to exhibit machines or other objects requiring foundations or special constructions, give the dimensions of those foundations or constructions.
2. If it is desired to exhibit apparatus requiring the employment of water, gas, or steam, what quantity or what pressure of water, gas, or steam will be necessary.
3. If it is desired to put machinery in motion, what will be the velocity proper to each machine, and what motive power will be required, expressed in horse-power.
4. In general, whatever information will be of use in the placing of the machine, and, wherever possible, a plan upon a fixed scale.

Producers who apply for room in the park, and propose to establish there constructions of any kind, or agricultural buildings, or gardens, will take care to give a plan, with a scale of the establishment proposed, with an indication of the extent of ground which will be necessary.

The amount of space assigned to the United States in the Exhibition Palace is about thirty thousand feet. The space to be assigned to them in the surrounding park for agricultural and other purposes has not yet been decided upon, and as it depends upon the nature of the applications for space there, it is very desirable that such applications should be sent in as soon as possible.

As much promptness as may be consistent with due deliberations is earnestly recommended in all applications, as it is possible that those received at New York after the middle of January, 1866, may be too late.

Due notice will be given to applicants as to the acceptance or rejection of their applications. If accepted, the applicants will have until January, 31, 1867, to prepare and transport their specimens to New York.

Detailed plans, on the scale of 0m.020 to the metre, showing the place assigned to each exhibitor and each individual mode of exhibiting, together with a list of the exhibitors, will be transmitted by the Government agent prior to Jan. 31, 1866, in order that the Imperial Commission may regulate the interior partitions of the building in accordance with the requirements of this nation. Each nation can claim, as its special park, that part of the Champs Elysées adjoining the space allotted to it in the palace of the Exposition.

It is apprehended that individuals may not fully appreciate the importance of providing a complete representation of the great staples and the crude agricultural and mineral productions of their several States; and he submits the expediency of causing some competent persons to be instructed in each State to cause to be collected, labeled and forwarded to the Agency specimens of the character indicated, space for which will be reserved.

No rent will be charged to exhibitors, whether French or foreign, for the space they occupy; but all the expenses for fitting up and decorating the same, either in the palace of the Exposition or the park, will be paid by them.

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The engraving shows a new plan of propelling boats with oars. They are so fixed that the rower faces the bow, and is able to direct the boat to avoid danger or otherwise with great ease and comfort.

The manner in which this is done is so clearly shown by the artist's pencil, that explanation is superfluous.

It will be seen that the oars can readily be shipped aboard at any moment, as at A, to avoid collision with the dock or any obstacle, or to stop the boat entirely.

It is claimed that this plan is much easier than the old one—that the capacity of a boat of a given size is greater, that it is more easily steered by the oars, that the oarsman cannot make a false stroke or "catch a crab," since the oar is fast and is not liable to turn in the hands, and that the oars may be suffered to float alongside without danger of losing them; also, that the boat is steadier in a sea-way.

A patent for this invention was obtained through the Scientific American Patent Agency, Sept. 12, 1865, by R. Smith; a working model may be seen by applying to him at No. 189 Front street, Brooklyn, N. Y., where, also, further information can be had.

**SPECIAL NOTICES.**

Martha M. Jones, administratrix of the estate of Samuel T. Jones, deceased, of Staten Island, N. Y., has petitioned for the extension of a patent granted to him on the 24th day of February, 1859, for an improvement in the manufacture of zinc white.

Parties wishing to oppose the above extension must appear and show cause on the 5th day of February next, at 12 o'clock, M., when the petition will be heard.

Simeon Savage, of Pomfret, N. Y., has petitioned for the extension of a patent granted to him on the 2d day of March, 1852, for an improvement in machines for printing floor cloths.

Parties wishing to oppose the above extension must appear and show cause on the 13th day of February next, at 12 o'clock, M., when the petition will be heard.

Lewis Lewis, of Vicksburgh, Miss., has petitioned for the extension of a patent granted to him on the 2d day of March, 1852, for an improvement in cotton presses.

Parties wishing to oppose the above extension must appear and show cause on the 12th day of February next, at 12 o'clock, M., when the petition will be heard.

Charles Neer, of Brooklyn, E. D., has petitioned for the extension of a patent granted to him on the 9th day of March, 1852, for an improvement in canal-gates.

Parties wishing to oppose the above extension must appear and show cause on the 19th day of February next, at 12 o'clock, M., when the petition will be heard.

Nicholas Tallafarro, of Augusta, Ky., and William D. Cummings, of Maysville, Ky., have petitioned for the extension of a patent granted to them on the 30th day of March, 1852, for an improvement in smoothing irons.

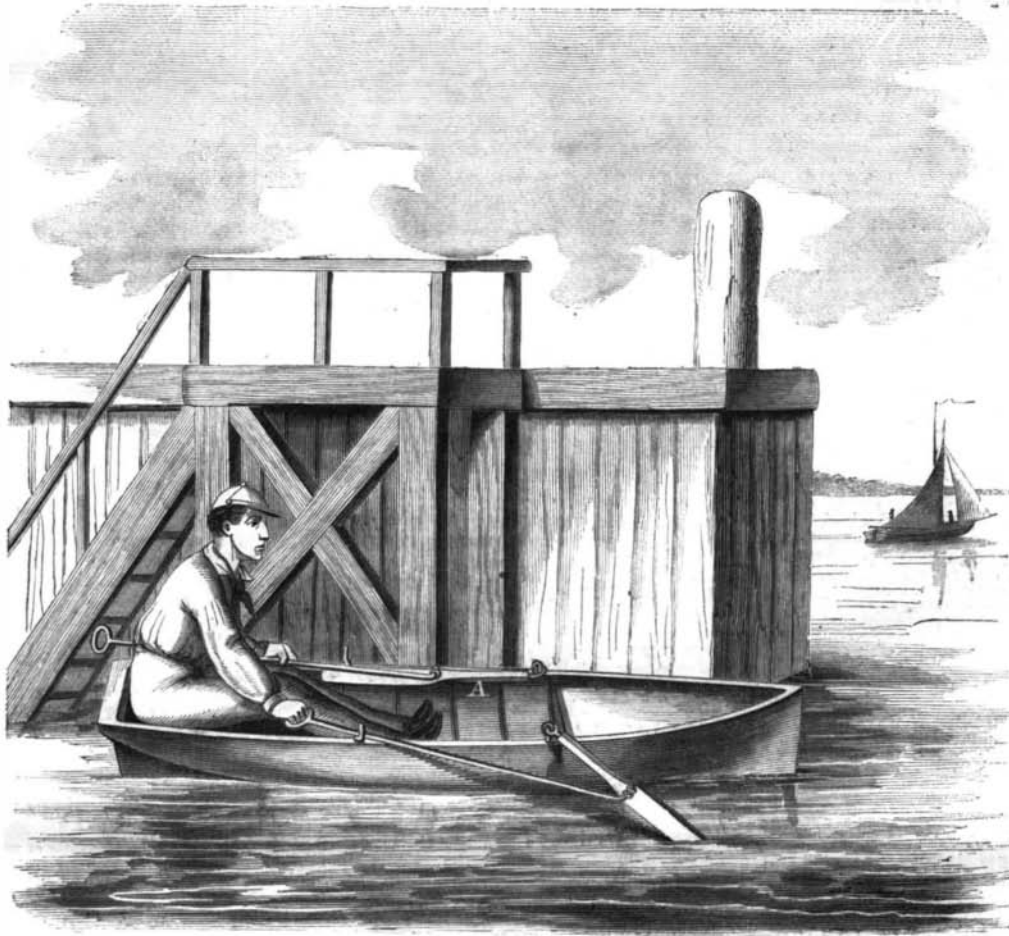
Parties wishing to oppose the above extension must appear and show cause on the 30th day of March next, at 12 o'clock, M., when the petition will be heard.

John M. Thatcher, of New York City, has petitioned for the extension of a patent granted to him

ble of furnishing a larger quantity of mellow, and is the one used in the French serpents. A solution of pernitrate of mercury is readily precipitated by sulphocyanide of ammonium, and the mercuric sulphocyanide may be easily so prepared. It is best to use the mercurial solution as strong as possible, and to keep it in excess throughout the precipitation. Solution of perchloride of mercury is not so easily precipitated as the pernitrate, probably owing to the solubility of the mercuric sulphocyanide in the chlorides.

"Perhaps I may be excused for adding that sulphocyanide of ammonium, suitable for the above purpose, may be very easily and economically prepared as follows:—One volume of bisulphide of carbon, four volumes of liq. of ammon. fort., and four volumes of methylated spirit are put into a large bottle, and the mixture frequently shaken. In the course of one or two hours the sulphide of carbon will have entirely dissolved in the ammoniacal liquid, forming a deep red solution. When this result is attained the liquid is boiled until the red color disappears and is replaced by a bright yellow. The solution is then evaporated at a very gentle heat (about 80° or 90° Fah.) until it crystallizes, or just to dryness. The product is sulphocyanide of ammonium efficiently pure for the above purpose. One recrystallization in alcohol will render it quite white.

"One ounce of bisulphide of carbon yields, by this process, exactly one ounce of sulphocyanide of ammonium."

**SMITH'S RIGGED OARS.**

on the 23d day of March, 1852, and reissued the 11th day of Sept., 1855, for an improvement in air-heating stoves.

Parties wishing to oppose the above extension must appear and show cause on the 5th day of March next, at 12 o'clock, M., when the petition will be heard.

**The Way "Serpents' Eggs" are Made.**

Mr. C. H. Wood gives, in the *British Journal of Photography*, the following directions for making the curious and popular toy, Pharaoh's Serpents:—

"The toy consists of a little cone of tin foil, containing a white powder, about an inch in height, and resembling a pastile. This cone is to be lighted at its apex, when there immediately begins issuing from it a thick, serpent-like coil, which continues twisting and increasing in length to an almost incredible extent. The quantity of matter thus produced is truly marvelous, especially as the coil which so exudes is solid and may be handled, although, of course, it is extremely light and somewhat fragile.

"Having a little of the white powder, with which the cones are filled, placed at my disposal by a friend, I submitted it to analysis, and found it to consist of sulphocyanide of mercury. This salt, when heated to a temperature below redness, undergoes decomposition, swelling or growing in size in a most remarkable manner, and producing a mixture of mellow (a compound of carbon and nitrogen) with a little sulphide of mercury. The resulting mass often assumes a most fantastic shape, and is sufficiently coherent to retain its form. It presents a yellow color on the exterior, but is black within. The 'serpent' shape, of course, results from the salt being burnt in a cone of tin foil.

"Both the mercurous and mercuric sulphocyanides decompose in the same manner, but the mercuric salt, containing more sulphocyanogen, seems capa-

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