# Scientific American.

ESTABLISHED 1845.

MUNN & CO., Editors and Proprietors.

PUBLISHED WEEKLY AT NO. 87 PARK ROW, NEW YORK.

O. D. MUNN. A. E. BEACH.

TERMS FOR THE SCIENTIFIC AMERICAN. Clubs.-One extra copy of THE SCIENTIFIC AMERICAN will be supplied gratis for every club of five subscribers at \$3.20 each: additional copies at same proportionate rate. Postage prepaid. Remit by postal order. Address

MUNN & CO., 37 Park Row, New York.

#### The Scientific American Supplement

is a distinct paper from the SCIENTIFIC AMERICAN. THE SUPPLEMENT is issued weekly. Every number contains 16 octavo pages, uniform in size with SCIENTIFIC AMERICAN. Terms of subscription for SUPPLEMENT, \$5.00 a year, postage paid, to subscribers. Single copies, 19 cents. Sold by all news dealers throughout the country.

Combined Rates. - The SCIENTIFIC AMERICAN and SUPPLEMENT will be sent for one year postage free. on receipt of seven dollars. Both papers to one address or different addresses as desired. The safest way to remit is by draft postal order, or registered letter. Address MUNN & CO., 37 Park Row, N. Y.

## Scientific American Export Edition.

The SCIENTIFIC AMERICAN Export Edition is a large and splendidperiodical, issued once a month. Each number contains about one hundred large quarto pages, profusely illustrated, embracing: (1.) Most of the plates and pages of the four preceding weekly issues of the SCIENTIFIC AMER CAN, with its splendid engravings and valuable information; (2) A MER CAN, with its spiendid engravings and valuable information [2]. Commercial, trade, and manufacturing announcements of leading houses. Terms for Export Edition, \$5.00 a year, sent prepaid to any part of the world. Single copies 50 cents. FF Manufacturers and others who desire to secure foreign trade may have large, and handsomely displayed announcements published in this edition at a very moderate cost.

The SCIENTIFIC AMERICAN Export Edition has a large guaranteed circu lation in all commercial places throughout the world. Address MUNN & CO. 37 Park Row, New York.

NEW YORK, SATURDAY, DECEMBER 10, 1881. Contents. (Illustrated articles are marked with an asterisk.) 

# TABLE OF CONTENTS OF THE SCIENTIFIC AMERICAN SUPPLEMENT No. 310,

For the Week ending December 10, 1881. Price 10 cents. For sale by all newsdealers.

II. ELECTRO-METALLURGY.—Electro-Metallurgy. Cleansing and preparing objects for electro-plating —Cleansing copper and copper alloys.—Cast iron, wrought iron and steel.—Zinc, tin, and lead.— Scratch brusbing.—Silver deposits.—Go, d. deposits.—Hoth baths.—

## CAN A PATENT BE SOLD BY SHERIFF FOR DEBT LIKE OTHER PROPERTY?

This question is frequently asked, and heretofore, in the absence of any definite decisions of the courts, we have been luminous substance obtained from burnt mother of pearl is accustomed, for many years, to answer that an ordinary sheriff's sale of a patent would be invalid, while an assignment of the patent by the owner would hold good and carry title against such sheriff's sale. Further, we have held that the proper way for a creditor to obtain title to a debtor's patent is to procure an order from a competent court, compelling the debtor to sign a deed of conveyance.

decisions.

Columbia, Murray vs. Ager, decided January, 1881. Mur- body. Excited by a momentary illumination it gives out a ray, having recovered a judgment of \$2,164 against Ager, bright light at first, which grows weaker and weaker, until who was the patentee of certain grain-dressing inventions, at last it can only be perceived by a perfectly quiet eye in represented to the court that the only means he had to real- the deepest darkness, and at last comes to rest. The afterize on his judgment was from the patent. Murray accord- illumination of these substances under discussion last much ingly asked the court for an order compelling Ager to exe- longer than the after-sound of a bell, since the waves of cute such assignments of patents to the purchaser as might light are much finer than the metallic vibrations of a ringbe necessary to carry the title, in conformity with the pa- ing bell. tent laws.

the patents, but claimed that the latter were not subject to match. In these cases, of course, the substance must be seizure and sale under the proceedings. The lower court brought close to the source of light. It is excited especially took the same view and dismissed the bill; but on appeal by burning magnesium wire and by the electric light, but the Supreme Court of the District reversed the decision of daylight is the best. Since water does not affect this subthe lower court, and, in a very interesting and exhaustive stance, and since its luminosity is not due to oxidation, and decision, held substantially as follows:

"A court of equity may direct the sale of the interest of an give light under water. inventor in his patent in order to satisfy a judgment obtained . against him in a court of law, the writ of execution having not excite it, but if the alcohol flame is colored blue by copbeen returned nulla bone, and for that purpose will require per it will. In the sun's rays those which lie in the violet the patentee to make an assignment of the patent, as pro- and ultra-violet act the most energetic, and they decrease in vided in Section 4,898 of the Revised Statutes of the United power toward the yellow. It is remarkable how the yellow States, and in default of such assignment within a limited and red rays destroy the effect of the opposing violet rays by time, will appoint a trustee, with authority to execute the extinguishing or considerably weakening the luminosity same.'

The second case occurred in the Supreme Court of California, Pacific Bank vs. Robinson, decided April 19, 1881.

of the United States may be required to be assigned to a rejudgment."

cases that, when proper supplementary proceedings are taken, his patent for the benefit of his creditors, or appoint a receiver for the patent, whose conveyance to the purchaser which was covered with glass is almost total dark. would be good.

### LUMINOUS PAINT.

result of any recent discoveries or improvements in its manufacture, for we are told that the substance which Canton pre-, again in action. pared was as good as any one can now make. Prof. Tuson, of London, has in his possession some of Canton's own make property to this day. It would seem as if the world was not priate. yet ripe for the discovery, and it lay for more than a century springs into importance, both technically and for ornamental purposes.

gave some details of its history, which may prove of interest.

All the recipes for making the luminous material depend upon the formation of sulphur compounds, sulphides of barium, strontium, or calcium. They either set out with the sulphates, which are reduced in different ways, or with 'ent authors. According to Gaedicke's observation the best carbonates or oxides, that are treated with sulphur or its compounds.

The Bologonian phosphorus was made, according to John, from pulverized barytes, free from iron, by mixing it with intensity of the light, like the sound of the bell, is greatest gum tragacanth to a cake, drying this and heating it for an at first and then decreases more rapidly than it does afterhour between layers of coal in a wind furnace. Osann re- ward. duced the sulphate of barium by igniting it in a current of material burut oyster shells, which he treated with flowers of lead and blacken; iron is also injurious because it rusts. of sulphur with small quantities of metallic oxides, such as little copal, which may be dissolved in oil of turpentine. antimony, with the view of obtaining different colors in this way. The color of the light is generally white, or, at first, bluish. Hyposulphite of strontium, or equal parts of carbonate of stroutium and sulphur, when ignited for twenty or twenty-five minutes, at first over an ordinary Bunsen burner bonate of barium and carbon give an orange-yellow light. composition, one may be luminous while the other is not, not being matured.

It seems rather as if the power of giving light depends not only on the correct chemical composition, but also upon a definite molecular condition. Hence it happens that the better than that from burnt oyster shells; also that when slaked lime is the material employed the result differs from that obtained from aragonite, although in all four cases the resulting substance has the same chemical composition. The luminous material is scarcely at all attacked by the common atmospheric influences.

The action of light upon such substances may be compared This subject has lately received the attention of two sepa- to striking a bell. A momentary impulse excites it and rate courts, and we will here present the substance of both causes the bell to vibrate and give forth a tone, which tone lasts for a certain length of time, continually growing feebler, The first case was in the Supreme Court of the District of until finally it ceases entirely. So, too, the phosphorescent

Most sources of light will excite phosphorescence in these The defendant admitted the judgment and ownership of substances, e. g., a petroleum lamp, gaslight, and even a hence does not need the presence of atmospheric air, it will

An alcohol lamp flame colored yellow by common salt will caused by these latter. Similar relations prevail when the substance is covered with colored glass. Dark blue glass, although it seems to considerably weaken the light, per-The court held that "a patent right issued under the laws mits all the active rays to pass through, and at times, when daylight contains many of the red and yellow rays, a subceiver, under proceedings supplementary to execution, who stance that has been covered with blue glass is more strongly may sell the same and apply the proceeds in satisfaction of excited than if exposed to pure daylight, because the blue glass prevents the extinguishing action of the red and yel-Thus, although an ordinary sheriff's sale of a debtor's patent low rays. If a surface that has been covered with phosphorright would be good for nothing, it appears from the foregoing escent paint is first excited and then one half covered with pasteboard and the other with yellow glass, the extinguishing the courts may compel the debtor to make an assignment of effect of the latter will be very noticeable. The portion covered with pasteboard will continue luminous after that

Heat has a peculiar effect upon the phosphorescent body after it has been isolated. It causes it to give a more intense light for a short time, but the luminosity is then of shorter duration than it otherwise would be. Heat acts here some-The introduction at this time of luminous paint is not the what as it does on a magnet, driving out the active power, so that it requires to be charged over again to set the power

It seems as if light bears the same relation to the phosphorescence of these bodies that electricity does to magnetin a sealed tube, inscribed 1764, which retains its peculiar ism; hence the name of light-magnet would not be inappro-

The color of the light thrown out is independent of the a curious toy in chemical collections. Then all at once it color of the exciting rays-i. e., a certain substance always glows with the same colored light whether it has been excited by a violet, blue, or colorless light. Neither does the color In a lecture before the Berlin Polytechnic Society, Gaedicke depend on the addition of certain metals, but seems to be the result of a definite molecular condition of the substance. The light emitted retains its color but a short time. No matter how prepared they all get to be one color after awhile -that is, white (?).

The duration of luminosity is differently stated by differones made at the present time last nineteen hours; but it requires perfect darkness and an eye entirely at rest, like on waking in the morning, to detect the faint glimmer. The

Its luminosity is instantly destroyed by chlorine gas, also hydrogen. In 1750 Markgraf heated sulphate of lime with by hydrochloric and nitric acids; more slowly by sulphuric charcoal-a method still in use to-day. Canton prepared a acid. It is further destroyed by substances which darken its phosphorescent sulphur compound of lime, taking as his color, hence it cannot be mixed with varnishes that contain sulphur. Grotthus attempted to improve on this method, When used as a paint it is mixed with some adhesive suband Osann modified it by substituting for the flowers of sul-stance like glue, and can then be mixed with oil, water, or a phur a metallic sulphide, which gave up sulphur when light-colored varnish, and applied repeatedly to the object heated, such as sulphides of antimony, tin, or mercury. that is to be rendered luminous. It is well to prepare a Wach returned to Canton's method, but mixed the flowers white ground for it with chalk or zinc-white mixed with a P. N.

Bath for iron and stee! uncosted.—Cold electro-giding bath.—
Management of the hot bathNickel platingThe batteryPre-
paring the workCopper depositsFormulæ for bot and cold
baths l'opper deposits by dipping - Electro brass platingFor-
mulæ for brass baths Management of the bath Tim p ating pro-
cess Electrotyping. The stereotype process for reproducing
metals, etc -Reproduction by electrotypy 49

4943 4945 4950

V. HYGIENE, MEDICINE, ETC.-Rabies -A possible cause and a probable preventive. By Dr. L. L. DORR 4947 4948 4949 

VI. PHYSUCS AND FHYSICAL APPARATUSPhenomena De- veloued by Heli, static star Disks. By G. W. Royston Pigort 1 lihustration	944 945
VII. AGRICULTURE, HORTICULTURE, ETCStoring Cabbages. 4	950
The Culture of Tuberoses	950
VIII. MISCELLANEOUS - The Railway Disaster at Charenton,	935
France 2 figures - Full page illustration	942

4942 49**45** 

## A Large Catch of Striped Bass.

A very extraordinary catch of striped bass was made and then over the blast lamp, give a green light, while car- November 18, by the Blackford Fishing Company, of Montauk Point, Long Island. Some 4,000 pounds of fish were The pure sulphides do not give any light at all. Hence captured, the larger proportion of the fish weighing from the chemical composition alone does not condition its power 50 to 75 pounds, while perhaps as many more escaped from of giving out light, since of two substances having the same the nets. The majority of the fish were females, their eggs