

and thousands of dollars of capital in their production.

OIL STOCK EXCITEMENT.

Nothing in the history of this country, if we except the furor that followed the opening of the gold fields of California, has caused so much excitement in business circles as the rapid development of the petroleum oil interests. There are oil stock exchanges, oil stock journals, and all the other appliances of regular commercial and financial operations. Oil cities even have sprung into existence, and speculation is running up to fever heat; hundreds of Joint Stock Companies have been organized, and a still larger number are now rapidly organizing. Thousands of persons are being allured to invest their money in the stocks of these companies under the stimulus of promises of large dividends.

Now, although there is much substantial merit in the oil well productions of the country, and it is true that there are many really substantial Companies, it behooves those who are infected with the oil fever, to be extremely cautious how they invest their money, or they will surely suffer loss.

Most of the Companies now organized have a nominal capital stock far exceeding the actual investment. Purchasers are attracted towards them by the magnetic newspaper puff, and by rose colored prospectuses they are led to expect results which, in many cases, can never be realized. To illustrate how these Joint Stock Companies are sprung upon the credulous public, we will give an example. A few individuals get control of a patch of land located somewhere in the oil region—land secured under excitement and at speculative prices. The amount promised to be paid for the property we will assume to be \$100,000, a portion of which will be taken by the original owner in stock; with a reserved working capital of \$25,000 additional. Upon this basis a stock scheme of \$500,000 is predicated, and all the enginery well known to the getters up of Stock Companies—for it is a profession now-a-days—is set in full tide of operation. Large commissions are paid to friends to forward the scheme by stirring about among their acquaintances and inducing them to subscribe. These *disinterested* "friends" are "let in," as the phrase is, on "bottom prices;" in other words, they get their shares of stock at cost prices, besides receiving generous commissions for roping in outsiders who pay for their stock two and three times its actual cost in the original investment. Such stocks are known in the market as "watered stocks," and the name as applied to oil stock—more water than oil, which is sometimes a peculiar phenomenon of the oil well—is quite apropos. In reference to the productive value of a particular tract it must be, in many cases, purely hypothetical. Calculations are often based on an assumed fact; sometimes simply on the ground that hard by is a "hundred barrel well" owned and worked by some other company; but cash dividends on the stock will be declared and duly paid—and thus the outsider will be at once assured that he has indeed "struck ile." Matters will proceed in this way for a few months, perhaps, during which time, under this artificial stimulus, the originators of the scheme will find ample opportunity to sell out to eager outsiders. Dividends will then cease, and all these oil stock martyrs will have to show for their investment will be a nicely engraved stock certificate, a few acres of undeveloped land, and a return of perhaps twenty-five per cent, or less, of the original investment in the watered stock. Even these poor profits from the speculation, the certificates excepted, may not be secure in possession; liabilities for the debts of the company may materially lessen them.

According to a carefully prepared table now before us there are more than three hundred and fifty organized companies now in existence, with published capitals, ranging from \$50,000 to \$10,000,000, and one company, proposing to consolidate several others with it, a capital of \$15,000,000.

It is impossible for any sound minded man to ignore the fact that thousands, if not millions of dollars will be abstracted from the people's pockets, and wasted upon a set of men, who, under the guise of respectability, are nothing more nor less than a set of genteel swindlers. As a general rule, we should think it would be safer to look for good

investments in any oil stocks rather than in those brought to our notice in the long winded advertisements which appear in the newspapers. Companies which can be relied upon are not obliged to resort to newspaper puffs for their success; and we advise those of our readers who have an itching for oil stock investments to look sharply into the matter before purchasing largely.

The stock speculative fever is now raging throughout the whole community to an alarming degree—and when the reaction comes on, many an unfortunate dupe will suffer a most prostrating debility.

PROF. DOREMUS'S LECTURES.

DELICATE TEST FOR ARSENIC.

The compounds of hydrogen formed the subject of the third lecture of Prof. Doremus's course on pneumatic chemistry. Among the most interesting experiments exhibited was the decomposition of arseniuretted hydrogen by heat. Some hydrogen was produced in a retort in the usual manner by the decomposition of water, and was passed through a U tube containing lime to free it from any carbonic acid that it might contain, and then through a second U tube filled with bits of chloride of calcium to absorb the vapor of water mingled with it, in order to procure the gas perfectly pure and dry. It then entered a small glass tube, the middle portion of which was curved into a flat coil, which was heated red hot. No stain appeared on the tube. But on pouring a solution of arsenic into the retort so as to produce arseniuretted hydrogen, a metallic deposit immediately made its appearance beyond the coil, showing that the gas was decomposed by the heat, when the hydrogen was set free, and the arsenic was deposited in the metallic form. The lecturer stated that if oxygen gas was blown backwards into the tube the arsenic would be oxydized, and the crystals of white oxide of arsenic would be found in the tube on the opposite side of the coil.

A NEAT MODE OF MAKING ORPIMENT.

Prof. Doremus explained that chlorine has so strong an affinity for hydrogen that it will take that element from many of its compounds. To illustrate this he introduced a little arseniuretted hydrogen gas under the mouth of a tall inverted bell glass filled with water, when the gas, of course, rose to the top, displacing its own volume of the water. Some sulphuretted hydrogen gas was then poured in the same way up the same glass. On adding some chlorine gas to the mixture, the chlorine took the hydrogen from both the arsenic and the sulphur, when those two elements entered into combination as the sesquisulphuret of arsenic, or yellow orpiment. The hydrogen and chlorine combined to form hydrochloric acid gas, which was absorbed by the water.

FREEZING OF MERCURY IN A RED HOT CUP.

The experiments of the fourth and fifth lectures were mostly repetitions of those made by the same lecturer last winter, and fully described at the time in the SCIENTIFIC AMERICAN. One of the most impressive of these was the freezing of a thimble full of mercury in a red hot platinum cup, by means of solidified carbonic acid and ether.

VOTE OF THANKS TO THE LECTURER.

At the close of the last lecture of the course, a vote of thanks was unanimously and most heartily given by the audience to Prof. Doremus, for his exceedingly interesting lectures and brilliant experiments.

TO OUR READERS.

PATENT CLAIMS.—Persons desiring the claim of any invention which has been patented within thirty years, can obtain a copy by addressing a note to this office, stating the name of the patentee and date of patent, when known, and enclosing \$1 as fee for copying. We can also furnish a sketch of any patented machine issued since 1853, to accompany the claim, on receipt of \$2. Address MUNN & CO., Patent Solicitors, No. 37 Park Row, New York.

MODELS are required to accompany applications for Patents under the new law the same as formerly, except on design patents, when two good drawings are all that are required to accompany the petition, specification and oath, except the Government fee.

RECEIPTS.—When money is paid at the office for subscriptions, a receipt for it will always be given; but when subscribers remit their money by mail, they may consider the arrival of the first paper a *bona-fide* acknowledgement of our reception of their funds.

INVARIABLE RULE.—It is an established rule of this office to stop sending the paper when the time for which it was pre-paid has expired.



ISSUED FROM THE UNITED STATES PATENT-OFFICE FOR THE WEEK ENDING DECEMBER 20, 1864.

Reported Officially for the Scientific American.

Pamphlets containing the Patent Laws and full particulars of the mode of applying for Letters Patent, specifying size of model required and much other information useful to inventors, may be had gratis by addressing MUNN & CO., Publishers of the SCIENTIFIC AMERICAN, New York.

45,465.—Machine for Making Match-splints.—Emory Andrews & William Tucker, Springfield, Mass.:

We claim, first, The combination of the series of hoppers, the sectional knife cylinder, E, and the guides, f, on the table, B, arranged, constructed, and operating substantially as described. Second, The rack, G, to which an intermittent rectilinear motion is imparted by suitable mechanism in combination with the guides, f, knives, e, feed-plate, D, and hoppers, C, constructed and operating substantially as and for the purpose set forth. Third, The combination of the elastic bands with the stationary lower slat and the upper movable slat in the vertically moving rack by which the match sticks are received and held, at the intervals between the sections or tiers, as they pass from the table under the pressure of the succeeding set.

Fourth, The arrangement substantially as described, consisting of the stationary and movable combs and their operating mechanism by which the alternate match splints within the embrace of the clamp, g, are slipped out so as to detach their points for dipping.

Fifth, We claim arranging the match-splints in the clamps in the manner described, as effected by the combs, r, r', so that they may project alternately at each side of the clamp for dipping and so that the tiers of matches being removed from the frame, may be laid upon each other checker-board fashion, with the blank ends separating the charged ends, preventing the friction of the composition on adjoining matches.

45,466.—Magazine or Self-loading Fire-arm.—John F. Appleby, Mazomanie, Wis.:

I claim the combination of the cartridge ratchet-rod, G, with the breech-piece, C, substantially in the manner and for the purpose herein shown and described.

I also claim the combination of the spring cartridge lifter, I, with the breech-piece, C, and ratchet-rod, G, substantially in the manner and for the purpose herein shown and described.

[This invention pertains to that variety of breech-loading fire-arms known as "magazine guns," in which a considerable number of cartridges are carried in the stock, and are so connected with and operated upon by the mechanism of the arm that the cartridges are successively seized and deposited within the barrel, ready for firing. An engraving and description of it appeared on page 49, Vol. XI., SCIENTIFIC AMERICAN.]

45,467.—Pump.—John Bean, Hudson, Mich.:

I claim the combination of the plungers, M and L, with the center valve, g, and the two valves, n, the whole constructed and operated substantially as and for the purpose herein described.

45,468.—Ore Amalgamator.—John M. Beath, San Francisco, Cal.:

I claim, first, A cylinder so constructed as to take the pulp in at its ends, and discharge it through openings in its periphery, using for that purpose the cylinder above described, or any other that is substantially the same and will have the intended effect.

Second, I claim the described method of arranging the dies on the periphery of the cylinder so as to produce a free circulation of pulp in the tank around the dies and cylinder.

Third, I claim the described method of hanging the dies so that the wear and pressure increases from the front to the back part, the whole being for the purposes set forth.

45,469.—Cartridge Box.—Erastus Blakeslee, Plymouth, Conn.:

I claim the combination of one or more movable metal tubes, each containing two or more cartridges with a spring top cartridge box and side punch, as herein described and for the purposes set forth.

45,470.—Evaporating Apparatus.—Stephed Bowerman, Battle Creek, Mich.:

I claim, first, The arrangement of the evaporating pans, E, and central zig-zag flue, C, within a closed furnace, A, in such manner that the top and bottom surfaces of said pans will be subjected to the heat radiated from said flue, substantially as described.

Second, A flue, C, which is conducted in its upward course through the furnace in such manner as to form an upper and a lower heating surface for each one of a series of removable pans, arranged substantially as described.

Third, Supporting the flue, C, and also the pans, E, when they are arranged substantially as described upon the frames, F, and rods, a, a, substantially as set forth.

Fourth, The application of over-flow pipes, g, to removable or stationary evaporating pans, which are arranged one above the other within a closed furnace, substantially as described.

45,471.—Grain Dryer.—Jonathan S. Buell & Samuel A. W. Marsh, Buffalo, N. Y.:

We claim, first, The combination with a grain-dryer and with a furnace for steam boilers or other fireplace of a reheating furnace and a fan-blower, when the latter is so arranged in a pipe or pipes leading from the primary fireplace into the grain-dryer, substantially as and for the purpose set forth.

Second, The combination and arrangement of the damper, J, and the pipes, D C and L, with the furnace, A, and the rotary fan, R, substantially as and for the purpose set forth.

Third, The combination of the pipe, Q, or its equivalent, with graduated openings with the rotary fan, R, for blowing either a hot or cold blast, substantially as and for the purpose set forth.

Fourth, The combination of the damper, V, with the pipe, C, for the purpose of regulating the draft of the boiler furnace, substantially as and for the purposes set forth.

45,472.—Horse Hay Fork.—Jason R. Cadwell, Dexter, Mich.:

I claim, first, The combination of the hinged toothed handle, C, locking-plate, B, and forked head, A, in such manner that the fork can be used either for elevating hay or as a common dung fork, at pleasure, substantially as described.

Second, Pivoting the handle of a hay-fork to a catch-plate, B, which is affixed to the fork-head, and applying a catch to said handle for fixing it at any desired angle to the tines of the fork, substantially as described.

45,473.—Stern-bearing for Propeller Shafts.—R. E. Campbell, New York City:

I claim the combination of the box, C, wedge, D, and one or more keys, E, F, arranged and operating as described.

[This invention consists in the application of a wedge acted upon by a key in combination with the lower box of a stern-bearing, in such a manner that by the action of the key and wedge said box can be readily adjusted as it wears, and when it has completely worn out it can be easily removed and replaced by a new one, without disturbing the bracket.]