

FALSE REPORTS OF THE "DICTATOR."

The trial of a new monitor, or vessel embodying the peculiar principles of its construction, is, by a portion of the press, made the occasion for general and total condemnation of it. These reports have two remarkable features: first, their malignity; second, their utter falsity; and the tone of them shows the writers to be prompted by the basest motives. The completion of the *Dictator*, No. 2, and her partial trial show her to be a perfect success; in fact, one of the greatest mechanical triumphs of the day; yet, in the face of this fact, some of the daily papers have allowed incompetent persons to express their "opinions" concerning her. Those who are familiar with the principles upon which the monitors are built need no refutation of the slander, but there are others to whom a letter from the distinguished inventor, Capt. Ericsson, will prove interesting. This letter recently appeared in the *Daily Times*, and says:—

"I beg to assure you that there are no grounds for the apprehension you express in your columns to-day with reference to the *Dictator*. The various statements published about the draft of this vessel are all incorrect. I avail myself of this opportunity to inform those who take an interest in the matter that there has been no guess work or miscalculation about the draft of water of the ocean monitors. The *Dictator* drew, after the launch, half an inch less than estimated, while the *Puritan's* draft was within a quarter of an inch of the estimate. I need hardly observe that the weight to be put on board, after the launch, was known almost to a pound, and, therefore, ultimate disappointment respecting the draft out of question.

"The draft of the *Dictator*, No. 2, published through the Boston journals, was 31 inches at the stern and 43 inches at the bow. In corroboration of the accuracy of those dimensions, it may be stated that the superintending engineer reported that the ship, on the 8th, was 30 inches out at the stern and 43½ inches out at the bow, showing a depression of ⅞ths of an inch compared with the draft on the 2d. The cause of the discrepancy is obvious, the ship being under completion. Yesterday and the day before the *Dictator* received an additional 215,000 pounds of coal, beside stores, equipment and crew. Accordingly, the superintending engineer reports that this morning, while at anchor in the bay, the ship was 26 inches out at the stern, 37 inches out at the bow, and 19½ inches out of water amidships.

"When the *Dictator* was planned, it was assumed, that keeping the side armor 18 inches out of water, amidships, would effectually protect the hull of the vessel against an enemy's shot during moderate rolling. Experience has shown that the maximum projection of the side armor above water, amidships, should be 16 inches, and that the fighting trim may, with propriety, be reduced to 12 inches, bow and stern being in that case two feet out. To bring the *Dictator* to the former immersion will require 220,000 pounds, the latter requiring 468,000 pounds in addition to the weight on board the ship this day.

"In considering the proper immersion or fighting trim of an iron-clad, which, like the *Dictator*, is intended to meet foreign iron-clads at sea, it will be well to bear in mind the recent improvement of naval ordnance in Europe. It is no longer 68-pounders that will be encountered, but projectiles that will put the side-armor of the *Dictator*, heavy as it is, to a severe trial. It will be well, therefore, to keep this side-armor well under water, more particularly since rolling, to a certain extent, must always be looked for. The great buoyancy of the *Dictator* at her present draft, viz., 62,000 pounds to the inch, is an important feature connected with the question of immersion.

"The supposition that the rudder of the *Dictator* had been damaged in launching the ship is quite erroneous. Nor is the published statement correct that the steering-gear is incomplete and out of order. The mechanism applied for working the rudder of this ship is considered by those best qualified to judge the most complete in the naval service. Under direction of the Navy Department, three distinct steering machines have been erected; one outside the turret, one within the pilot house, and a third placed on the berth-deck, under the turret. Each machine, or apparatus, operates by itself, but so arranged that the three may be worked together. The rudder has two

tillers, independent of each other, one above and the other below deck. The upper one is actuated by a chain on deck; the lower one by a wire rope, suspended under the deck beams. The trouble experienced with the rudder is simply this, that while the ship was aground at the Navy-Yard and washed into the step in which works the pivot on which the rudder turns. It will be proper to observe, that when the *Dictator* was taken from the Delamater works to the Navy-Yard, two men could work the rudder—a positive proof that no damage was received during launching. Commodore Rodgers, I am informed, intends to run his ship at a slow rate in the bay, until the sand is crushed and washed out of the step, and the pivot made to work free. The run to-day, it appears, caused the ship to work with considerably greater ease than yesterday. It is to be hoped that the naval reporters will not imagine that the Commodore is trying for speed while he is merely engaged in putting his rudders in proper working order.

"New York, Nov. 12, 1864."

MELTING WROUGHT IRON BY ELECTRICITY.

By invitation of Professor Ogden Doremus, a few days ago we went into the Free Academy to see the great galvanic battery which he uses to illustrate his lectures on electricity. The cups hold one gallon each, and at the time of our visit 360 of them were filled and in operation. Standing in close rows, they nearly cover the floor of a long room. The conductors from the ends are copper ribbons an inch and a half in width, and they are led through holes in the wall into the lecture room.

This enormous battery enables Professor Doremus to exhibit the various effects of galvanism to his classes on the greatest scale. The light produced by the carbon points is far in excess of that resulting from the heating of lime by the oxyhydrogen blowpipe. This is demonstrated by employing the two in the solar microscope. By this electric light crystals of uric acid not larger than the head of a small pin are magnified to the size of ten feet, with perfect definition of outline and structure.

Among the effects of the battery which Professor Doremus exhibited was the decomposition of potash by the current. To direct the current into the cup of potash the pole was terminated by a wrought iron rod about the size of a lead pencil, and in the course of a few seconds the end of this rod was melted, a drop slowly gathering and finally dropping off, when it scattered in a hundred sparks.

A common class experiment with this battery is the volatilization of gold. A quarter of eagle gold piece is placed on a carbon support and the current directed upon it, when the gold rises as a yellow vapor. If a silver cup is held over it, the cup is gilded by the deposit of the golden fumes.

The other apparatus in the Free Academy is on the same large and costly scale as the galvanic battery; the most talented and brilliant lecturers are employed; and all these advantages are free to every child in the city who is gratified to profit by them.

"Thou my country, thou shalt never fall,
Save with thy children—thy maternal care,
Thy lavish love, thy blessings showered on all—
These are thy fetters. Seas and stormy air
Are the wide barrier of thy borders, where
Amid thy gallant sons that guard thee well
Thou laughest at enemies. Who shall then declare
The date of thy deep founded strength, or tell
How happy in thy lap the sons of men shall dwell."

Back Numbers and Volumes of the "Scientific American."

VOLUMES III., IV., VII., AND X., (NEW SERIES) complete (bound) may be had at this office and from periodical dealers. Price, bound, \$25 per volume, by mail, \$3— which includes postage. Every mechanic, inventor or artisan in the United States should have a complete set of this publication for reference. Subscribers should not fail to preserve their numbers for binding. VOLS. I., II., V., VI. and VIII. are out of print and cannot be supplied.

BINDING.—Those of our subscribers who wish to preserve their numbers of the SCIENTIFIC AMERICAN for future reference, can have them substantially bound in heavy board sides, covered with marbled paper, and leather backs and tips, for 75 cents per volume.

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 1833, to accompany the claim, on receipt of \$2. Address: MUNN & CO., Patent Solicitors, No. 37 Park Row, New York.



ISSUED FROM THE UNITED STATES PATENT-OFFICE

FOR THE WEEK ENDING NOVEMBER 15, 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.

45,007.—Apparatus for Purifying Mineral Oils.—Wm. Adamson, of Philadelphia, Pa.:

I claim the mode herein described of purifying mineral oils, that is to say, mixing the oil with acids or alkalis and washing the mixture with water in a tank or reservoir, by means of a paddle-wheel acting on the contents of the tank, in the manner described.

45,008.—Manufacture of Cast-steel.—Daniel M. Adee, of New York City:

I claim, first, The use of antimony in the manufacture of cast-steel.

Second, The use of lime in the manufacture of cast-steel, substantially in the manner described.

Third, The use of the composition hereinbefore specified, and made of the ingredients above set forth, for the purpose described.

[This invention relates to a composition of the principal ingredients, of which are antimony or lime with franklinite or charcoal, and which when brought in contact with wrought iron, and melted with the same in a crucible, produces cast-steel of superior quality.]

45,009.—Bayonets.—F. W. Alexander, of Baltimore, Md.:

I claim the application of the principle of the saw to a bayonet; in other words supplying to each gun a saw as well as a lance or sword, whether the saw bayonet be constructed precisely like the shape in the drawings appended, or in a modified form.

45,010.—Pressure Gauges.—Alexander Allen, of Perth, Scotland:

I claim the pressure gauge as composed of the siphon tube, G, the non-transparent vessel, A, and the transparent glass tube, D, or its equivalent, arranged and connected substantially as described.

I also claim the means of fixing the glass tube in place with tight joints at its ends, the same being effected by the tubular screw nut, C, the female screw, F, co-operating washers, B and C, and the extension, B', the whole being arranged substantially as hereinbefore described.

45,011.—Sheep Racks.—Amos Allerton, of Aztalan, Wis.:

I claim the special construction and arrangement of the adjustable doors or covers, K K, crib, I, with the inclined floor, J, in combination with the racks, P E, grain troughs, D D, and guards, when used conjointly, so that the grain troughs are between the racks and racks, with the hay cribs inside, as and for the purpose set forth.

45,012.—Faucets.—Alexander Bain, of New York City:

I claim the yoke or lever, C, applied below the plug of the cock or faucet, in the manner specified, so that the liquid may be drawn by pressing the said yoke or lever by the vessel to receive the liquid, as specified.

45,013.—Apparatus for Drawing Liquids.—Alexander Bain, of New York City:

I claim, first, A pipe connected with the lower part of a vessel containing the liquid to be drawn, and rising above the level of such liquid to retain the same, and fitted so that said pipe can be turned down below the level of said liquid for its delivery, as specified, thereby dispensing with the cocks or faucets heretofore employed for stopping the delivery of liquid, as set forth.

Second, I claim the sleeve, F, fitted as specified, to make a water-tight joint at the place where the discharging pipe passes through the thimble or stationary pipe, E, as set forth.

Third, I claim the step or platform, I, and parallel motion bar, K, in combination with the pipe, A, as and for the purposes specified.

45,014.—Locks.—Halsey H. Baker, of New Market, N. J.:

I claim, first, The combination of the bar, B, with the catches, E' and the double-acting tumbler, P, substantially as and for the purpose set forth.

Second, The combination of the bar, B, and cam, L, with the recesses, M and N, of the projection, C, substantially as and for the purpose set forth.

Third, The combination of the plate, I, and its projections, with the recess, M, and the bar, B, substantially as and for the purpose set forth.

Fourth, The combination of the bolt, Q, and the catches, R and S, substantially as and for the purpose set forth.

Fifth, The combination of the small locks, G and H, one or both, with the catches, E', substantially as and for the purpose set forth.

Sixth, The combination of the flanges, J' and K', with the lock plates, A, and the bar, B, substantially as and for the purpose set forth.

45,015.—Flaring Metal Hoops.—Henry D. Barnes, of New Haven, Conn.:

I claim giving to a metal hoop the requisite flare, by rolling upon its edges, substantially as and for the purpose set forth.

45,016.—Sash Fastening.—Fordeyce Beals and C. T. Griley, of New Haven, Conn.:

I claim the bolt, C, and spring, D, in combination with the plates, E F, the latter being provided with the V-shaped slot, G, and the former provided with the pin, H, passing through said slot, G, all arranged substantially as and for the purpose herein set forth.

[This invention relates to a new and improved fastening for window sashes, designed more especially for car sashes, in order to hold or retain them at different heights. The object of this invention is to obtain a sash fastening which will be simple in construction, not be liable to get out of repair, and be capable of being operated without any special manipulation apart from the simple raising of the sash.]

45,017.—Felting Machines.—John H. Bloodgood, of New York City, and Moses A. Johnson, of Lowell, Mass.:

First, We claim the use in machines for felting of a rubbing cylinder, whose surface is so constituted that steam or hot air may readily pass through the same, from within or without, and act directly upon the material to be felted, whether said cylinder be used in combination with an endless apron, as herein described, or any other opposing surface.

Second, We claim in machines for felting, the use of a vibrating, rotating cylinder heated from within by steam, hot air, gas or other means, substantially as and for the purposes described.

Third, We also claim covering the rotating, vibrating cylinder of felting machines with wire cloth, substantially as and for the purposes above set forth.

Fourth, We also claim the combination of the cam herein described, with the cylinder, for the purpose of giving the rapid vibratory motion to the latter.

Fifth, We also claim the wire guides, R R, shown in Figs. 4 and 5, the object of which is to form suitable channels for guiding the yarns, substantially as described.