

THE PASSAIC—A FORMIDABLE VESSEL.

This extraordinary vessel, the second of the *Monitor* class launched, is rapidly approaching completion—in fact, is so near it that we are informed her trial trip will take place in a few days. Workmen swarm in every part, so much so as to almost incommode each other. The armor, turret, and plan of ship are familiar to all our readers, having been described in previous numbers of this paper; the gun ports are drilled in the battery, or turret, and the weapons themselves look solemnly through and forbid any attempt at familiarity; indeed the appearance of these monstrous cannon—one of 15-inches bore, and the other of eleven, and weighing respectively 42,020 lbs. and 15,000 lbs.—would, on superficial examination, seem to be sufficiently appalling to the enemy if he could examine them, without the argument of the 560 lbs. of iron which the largest one throws. The other defences, combined with the ordnance, will make the *Passaic* the most formidable vessel now afloat, with the exception of the unfinished *Roonoke*. The decks are nearly all plated with the one-inch covering, and only a few details remain to be finished. Descending to the interior of the vessel, we find the steam machinery all completed and ready for use, the peculiarity of its appearance would impress the beholder at a glance. No attempt has been made at useless ornamentation, or gew-gaws, as is too often the case, they are simply clean, neat and tasty, easily accessible and apparently readily controlled. We think a description will interest our readers. A steam cylinder resting on its appropriate plate, is divided in the center by a partition, unbroken we suppose, except by the necessary hole for the boring bar, afterward closed with a bonnet; from either end of this cylinder issues a small trunk, to the bottom of which is attached a rod connecting with a rocking shaft and lever running across the engine front; directly from this shaft the screw is driven by means of an arm, and the ordinary connecting rod. The arrangement is as simple and free from detail as anything could be, and has this advantage to those who like to keep clean about machinery, that they are easily managed and open to view in every working part; the air pumps are independent from the main engine and also in plain sight; the valve gear is of the slide variety, worked by eccentrics in the ordinary manner, except that these are not upon the main shaft, but upon a counter shaft directly in line with the former and from which they are worked by an offset arm. An ingenious method of reversing looked so tempting that we almost forgot that cardinal virtue about machinery, "touch not, handle not," and came near backing the *Passaic* out of the dock. The boilers are of the usual navy pattern, so far as we could discover from a cursory examination; so many mechanics were about that we felt a conscientious hesitation in interfering with their patriotic labors. The other and finer details of the ship and machinery we shall give more at length upon the occasion of the official trial. We would add, however, that the machinery and fixtures bear the unmistakable impress of Mr. Ericsson's genius.

RECENT AMERICAN INVENTIONS.

The following are some of the most important improvements for which Letters Patent were issued from the United States Patent Office last week. The claims may be found in the official list.

Car Truck.—The object of this invention is to economize in the application of steel springs to car trucks and at the same time obtain a truck that will have greater elasticity than the ordinary ones and be capable of running easier or smoother over the track, and the shoe bars at the same time be allowed to yield readily to the action of the brake mechanism. The invention consists in a novel construction of the car truck, whereby two springs are made to answer for the truck instead of four hitherto used. The invention also consists in a novel way of suspending the shoe bars to the truck, whereby the former may be readily attached to and detached from the latter. The inventor of this improvement is Peter Lamb, of Cincinnati, Ohio.

Stump Extractor.—This invention is an improvement in machines for pulling up stumps of trees, &c., where, in the offset, the power required to extract them is very great, but it gradually decreases as the stump is loosened, requiring much less power at the

latter part of the operation than at first. The invention consists in constructing a machine, formed of two truncated cones, spirally grooved, attached to shafts that give motion to a bevel gear wheel, on the shaft of which is a cone pulley with a spiral groove in its surface, the whole constructed so as to gradually increase in speed as the stump is extracted and so that the team will travel the shortest possible distance. Freeman Godfrey, of Grand Rapids, Mich., is the inventor of this improvement.

Grain Separator.—This invention relates, first, to an improved means for preventing the hopper from choking or clogging, and consists in the employment of a reciprocating slide placed at one side of the hopper and arranged to operate in connection with the upper shoe of the machine. Second, to two separate shoes placed within the case of the machine in reverse inclined positions, one shoe being provided with wire sieves and the other with perforated sheet-metal screens, whereby the grain may be properly separated from all foreign substances, and oats separated from wheat. Charles Kathan, of Hardin, Iowa, is the inventor of this device.

Watch and Chronometer Escapement.—The object of this invention is to dispense with the extremely delicate springs used in the kind of escapement known as the chronometer escapement, commonly used in chronometers, and to obtain an escapement in which all the advantages of the ordinary chronometer escapement are retained, but which is no more liable to get out of order than a lever escapement, and which is of such simple construction and adjustment that any watchmaker of ordinary skill can make and apply it; to this end it consists in substituting for the springs ordinarily used, an arm and pallet of repose, combined and applied so as to be acted upon by a simple spring not requiring to be of any exact length. This device is the invention of Robert Barclay, of Buffalo, N. Y.

Stamp Tax—Important to Inventors.

(Copy.)

TREASURY DEPARTMENT,
Office of Internal Revenue, Oct. 16, 1862.

SIR:—In reply to your letter, I have to state:—
First, that a power-of-attorney to prosecute an application for a patent, or to transact other business before the Commissioner of Patents, comes within the meaning of the fourth clause of the Excise Law, relating to "Power-of-Attorney," and is therefore subject to the dollar stamp.

Second, that, in my opinion, the assignment of an invention or patent right must be regarded as an agreement, and must be stamped accordingly.

Third, that every paper is equally valid, issued before January 1st, 1863, without a stamp as with it. If the unstamped instrument should be needed as evidence in court, the party using it would be subjected to an expense of five dollars in addition to the cost of the stamp required. Congress will probably give relief in this particular. Very respectfully,
GEO. S. BOUTWELL, Commissioner.

SEVENTEEN THOUSAND PATENTS SECURED THROUGH OUR AGENCY.

The publishers of this paper have been engaged in procuring patents for the past seventeen years, during which time they have acted as Attorneys for more than SEVENTEEN THOUSAND patentees. Nearly all the patents taken by American citizens in FOREIGN countries are procured through the agency of this office.

Pamphlets of instructions as to the best mode of obtaining patents in this and all foreign countries are furnished free on application.

For further particulars as to what can be done for inventors at this office, see advertisement on another page, or address

MUNN & Co.,
No. 37 Park Row, New York.

LARGE METEOR.—On the morning of the 18th inst., at five o'clock and four minutes, we observed a large meteor. Its path, as near as we could discover with eyes still dimmed by sleep, was from west to east, and its passage extremely rapid. The nucleus was quite large and the general appearance of the celestial eccentricity was very brilliant.



ISSUED FROM THE UNITED STATES PATENT OFFICE

FOR THE WEEK ENDING OCTOBER 14, 1862.

Reported Officially for the Scientific American.

* * Pamphlets giving full particulars of the mode of applying for patents, under the new law which went into force March 2, 1861, 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.

36,634.—L. A. Aspinwall, of Ireland's Corners, N. Y., for Improvement in Machines for Planting Potatoes:

I claim, first, The box or magazine to contain the seed potatoes, having a hollow cylindrical revolving bottom, with openings in its upper and lower plates for the passage of the potatoes down into the ground; the openings in the upper plate being provided with a gate to regulate their size, also with trap doors operating automatically, to protect the potatoes from injury, and regulate their passage through the hollow bottom, substantially as described in this specification.

Second, The combination of the box or magazine, so constructed and fitted as described, with the gearing for revolving the bottom, and with the plow and scraper, substantially as set forth in this specification.

36,635.—A. B. Bailey, of Middle Haddam, Conn., for Improvement in Caps for Coffin Screws:

I claim the flat ear or lug, d, of the cap, B, in combination with the slitted prominence, h, on the base, A, when arranged as shown, to form a new and improved catch or fastening for an ornamental cap for coffin screws, as herein set forth.

[This invention relates to an improvement in the ornamental caps which cover the screws of coffins, and consists in a novel and improved way of securing the cap to its base over the head of the screw, whereby the cap is prevented from being casually released and sliding off from over the head of the screw so as to expose the same, the invention also insuring a snug or proper fit of the cap to its base.]

36,636.—Zachariah Baker, of Erie, Ill., for Improvement in Tanning:

I claim the use of the oats and barley chopped (unbolted), in connection with the salt for a bath, as combined and in the proportions set forth in my specification, and also the use for a tanning compound composed of the smart weed, may weed, oxalic acid, kino, catechu, potash and red sanders, as combined and in the proportions substantially as set forth and mentioned in my specification.

36,637.—Robert Barclay, of Buffalo, N. Y., for Improvement in Chronometer Escapements:

I claim the slide, with a toe, i, the pallet of repose, e, and the spring, j, the whole applied in combination with each other and with the escape wheel and lifting pallet, substantially as and for the purpose herein specified.

36,638.—A. M. Beebe, of West Bloomfield, N. Y., for Improvement in Whiffletrees:

I claim the combination and arrangement of the equalizing eveners, A B and D, with the whiffletrees, a b and d, for three-horse teams, substantially in the manner specified.

36,639.—William Bickel, of Pottsville, Pa., for Improvement in Stoves:

I claim the employment or use of an air chest, D, placed centrally in the fire place of a stove or furnace, communicating with the ash box thereof, and provided with horizontal tubes, F, in combination with tubes, G, attached to the sides of the body of the stove or furnace, and communicating with the external air, substantially as and for the purpose herein set forth.

I also claim the valve, I, placed within the air chest, D, and the covers or slides, H, applied to the outer ends of the tubes, G, for the purpose of regulating the admission of air into the fire-box as specified.

I further claim the triangular form of the tubes, F G, and the inclined ends, when used as and for the purpose herein set forth.

[The object of this invention is to facilitate the burning of very fine coal in stoves and furnaces, and consists in introducing air into the body of coal in the fire-box in such a manner as to insure a circulation of air through the entire mass, and the perfect combustion of the whole.]

36,640.—L. G. Bradford, of Plymouth, Mass., for Improved Apparatus for Leathering Tacks:

I claim, first, The application and use of the horizontal reciprocating separator, D, for taking the tacks singly from the foot, with the inclined guide plane, and carrying them to the receiving dies or other receptacle for holding the tacks during the process of being driven through the leather or other material.

Second, The combination with the reciprocating separator of the self-acting latch, b, for throwing or removing the tack from the notch, a, or its equivalent.

36,641.—Lazare Cantel, of New York City, for Improved Canteen:

I claim the lining of metal to the leather canteen, applied substantially as specified.

36,642.—Joseph Chase, of Lowell, Mass., for Improvement in Machines for Cutting Flocks:

I claim the plate, I, placed within the cylinder, A, and arranged relatively with the knife cylinder, D, to operate as and for the purpose herein set forth.

[This invention relates to an improvement in the ordinary flock-cutting machine which is in most general use, the same consisting of a rotating hollow cylinder, provided with ribs on its inner periphery, and a rotating cylinder of spiral knives placed within the cylinder and arranged with a stationary knife, over the edge of which the edges of the spiral knives pass and perform the cutting operation.]

36,643.—J. E. Culver, of Hudson, N. J., for Improvement in Steam-Generating Apparatus:

I claim, first, The combination within the boiler of a furnace, B, a system of submerged flues, E E, and one or more recirculated diaphragms, d, substantially as herein specified.

Second, The furnace, B, constructed with internal fire-box, C, grate, D, diaphragm, M, air inlet, a, passages, f f, chamber, g, and outlet, F, the whole arranged substantially as and for the purpose herein specified.

Third, The combination of the boiler, A, furnace, B, fire-box, C, grate, D, diaphragm, M, air inlet, a, passages, f f, chamber, g, outlet, F F, and flues, E E, the whole constructed and arranged to operate substantially as herein specified.

[This invention relates to that class of steam-generating apparatuses in which the gaseous products of the combustion of the fuel are allowed or caused to mingle with steam generated by heat transmitted from them to the water, and used in combination with such steam, as a further source of motive power. The principal object of the invention is to obtain a combination of the steam and gaseous products of combustion at as low a temperature as is possible, and thereby not only to obviate the difficulties attendant upon the use of steam and gases at a high temperature, but to generate the greatest quantity of steam attainable from the combustion of a given quantity of fuel; and the in-