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 solemly 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 *Roanoke*. 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. Ericcson'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 delcate 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.

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 gage 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 arm, h, made 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 of 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 here in 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-

vention consists in a certain construction of the generating apparatus, and certain improvements in some of the details thereof to effect that result.]

36,644.—Jacob Delong, of Covert, N. Y., for Improvement in Harrows:

I claim the bars, a a′, arranged or disposed so as to cross each other at right angles, in combination with the teeth, C, and sockets, D E, the teeth passing through the sockets and bars, and the sockets adjusted to the bars and made to clamp the same by means of the screws or bolts, d, which fit in the angles of the bars, substantially as and for the purpose herein set forth.

[The object of this invention is to obtain a jointed or flexible harrow of simple construction, and which will be strong and durable, with its teeth well braced and so arranged or fitted in or to the harrow as not only to be permanently secured in position, but also made to serve as a means to firmly connect the framing of the harrow together, or keep the parts thereof in a proper relative position with each other.]

36,645.—H. H. Elwell, of South Norwalk, Conn., for Improvement in Locks:

I claim having the bevels a a′, arranged one above the other upon the bolt, B, so that the inclined surface of each bevel will extend entirely across the face of the bolt, all as set forth.

[This invention relates to an improved lock of that class designed to be applied to doors that open either to the right or left, that is to say, capable of being so adjusted as to be applied either to a right or left hand door. The invention consists in having the latch or catch bolt of the lock provided with two bevels at its end, one bevel being in a reverse position to that of the other, or by having two separate latch or catch bolts provided with reverse bevels, in connection with a strike or nosing, provided with two slots or openings, all being arranged in such a manner as to admit of the application of the lock to the door without the adjustment, in any case, of any of its internal parts.]

36,646.—Samuel Fretz, of Buckeye, Ohio, for Improved Hand Seed-Dropping Device:

I claim the combination of the slide, C, lever, D, seed slide, E, and spring, F, all arranged and applied to the box, A, provided with the cut-off, a′, to operate as and for the purpose herein set forth.

[The object of this invention is to obtain a hand seed-dropping device of simple construction, which will admit of corn and other seed being dropped very expeditiously and accurately by a very simple manipulation.]

36,647.—William Gilfillan, of Syracuse, N. Y., for Improvement in Devices for Closing Gates:

I claim the employment of the double cam, F G, for the purpose of graduating the force applied to the door, constructed and arranged substantially as set forth.

36,648.—Freeman Godfrey, of Grand Rapids, Mich., for Improvement in Stump Extractors:

I claim the spirally-grooved truncated cone, C, provided with a journal bearing at each end, and having rigidly secured upon it at one end a bevel gear wheel, D, in combination with the bevel pinions, a a, shafts, E E, and fusees or spirally-grooved wheels, G G, when arranged to operate in the manner and for the purpose specified.

36,649.—Peter Hayden, of Pittsburgh, Pa., for Improvement in Lamps:

I claim a wire clasp extending about two-thirds around the chimney ring, shaped and operating as described.

[This invention consists in the application of a spring clasp to the lamp top, for the purpose of securing the glass chimney in a proper position thereon.]

36,650.—R. P. Henry, of Akron, Ohio, for Improved Machine for Scouring Marble and Free Stone:

I claim, first, Constructing a machine for scouring marble and free stone, with a vessel for holding water, in combination with a central vessel for holding sand, substantially as and for the purposes described.

Second, The use and employment of a funnel-shaped vessel, fitted to the eye of the machine, and opening into it, for holding dry sand and delivering it upon the stone, substantially as set forth.

Third, The combination with the central sand receptacle of the convex distributor, C.

Fourth, The combination of the curved grooves, D, with the central eye, C, substantially as set forth.

36,651.—A. P. Hopkins, of Bentleysville, Pa., for Improved Fence for Sheep Folds:

I claim constructing fences with posts, A, and trap irons, c, substantially in the manner and for the purpose set forth.

36,652.—John Jacobs, of Columbus, Ohio, for Holder for Pens, Pencils, &c.

I claim a tubular pen-holder, adapted to receive the human finger into or through it, and a writing pen, pencil, or brush upon its outer surface, and to maintain its place upon the finger, and to support and confine the pen, pencil, or brush in position during the operation of writing, marking or coloring, substantially as set forth.

36,653.—Charles Kathan, of Hardin, Iowa, for Improvement in Grain Separators:

I claim, first, The slide, D, placed underneath the fixed side, b, of the hopper, C, arranged and operated substantially as shown, for the purpose herein specified.

Second, The two shoes, E′ E″, provided respectively, one with the sieve, I, and the other with the screen, L, and sieve, M, and connected together so as to be operated simultaneously by the same mechanism, in combination with the fan, B, and adjustable board, T, all arranged as and for the purpose herein set forth.

36,654.—I. A. Ketcham, of Brooklyn, N. Y., for Improved Apparatus for Operating Submarine Batteries:

I claim, first, Advancing a submarine battery and adjusting it to any suitable position to be exploded by means of a sliding rod, C, substantially as and for the purposes described.

Second, Passing the rod, C, through a universal joint, substantially as described, to enable its adjustment to any position desired and relieve the battery and rod from any effect by the rocking or rolling of the vessel.

Third, The casing, A, and sliding gate, B, employed in the manner explained to constitute a closable water-tight compartment for the reception and attachment of the battery.

[By means of this invention an explosive shell or battery may be projected from the side, bow or stern of a vessel in any direction or position under the surface of the water, and exploded while it is held, or after it has been left beneath an enemy's vessel or any other object which it is desired to destroy.]

36,655.—J. W. Koehler and Fredk. Richards, of Decatur, Ill., for Improvement in Wind Wheels:

I claim, first, The cap or shield, D, when applied to and used in combination with a horizontal wind wheel, C, substantially as and for the purpose herein set forth.

Second, The horizontal circular or annular platform, H, applied to the framing, A′, in combination with the pendent bar, G, and rods, e e, arranged as shown, for the purpose of adjusting the cap or shield and retaining it relatively with the wind and the exposed buckets of the wheel, C, to regulate the speed thereof, as described.

Third, The hinged or adjustable vane, F, in combination with the rotating and adjustable cap or shield, D, and wheel, C, as and for the purpose specified.

[This invention consists in the application of a cap or shield to a wind wheel arranged in such a manner that only a portion of the wheel is exposed to the action of the wind, and the latter allowed to act upon or against the former in the most formidable manner for the driving of machinery, the invention at the same time admitting of the speed of the wheel being regulated as desired irrespective of the velocity of the wind.]

36,656.—L. J. Knowles, of Warren, Wass., for Improved Apparatus for Operating Valves of Steam Engines:

I claim operating the slide valve, H, by means of a piston, I, or its equivalent, which is just brought into a proper position to take steam, substantially as described, by a partial rotary motion derived from the engine, and which is then driven by the steam independently of the engine, substantially in the manner described.

I also claim the employment of oblique openings or ports, b b′, in combination with the piston, I, and the steam passages of its cylinder, substantially as and for the purposes set forth.

36,657.—Peter Lamb, of Cincinnati, Ohio, for Improvement in Car Trucks:

I claim, first, Constructing the car truck of two parts connected together by springs, D D, arranged substantially as herein described.

Second, Attaching the springs, D D, to bars, C, which are connected at their ends by links, B, to rods, d, which pass through pendents, b, and have nuts, e, on them, for the purpose of regulating the tension of the springs, as set forth.

Third, Securing the links, I, to the shoe bars, H, and cross bars, i, of the truck, by means of the sockets, J, provided with recesses, k, and slides, l, arranged as herein described.

36,658.—J. S. Lash, of Carlisle, Pa., for Improved Washing Wringing Machine:

I claim the gate or movable frame, G, the pitman, O, the lever, R, the roller, S, the rubber, C, the springs, d d, the grooves, f f, and the rollers, g g, the whole arranged in the manner and for the purpose herein fully set forth and described.

36,659.—William Jones, of Rochester, N. Y., for Improvement in Coal-sifters:

I claim tightening the joints between the drawers, B and T, and the case, A, for the purpose of preventing the escape of dust or ashes from the apparatus during the process of sifting, by means of the adjusting bars, E, which are constructed and arranged substantially in the manner specified, and operated by the set screws, D.

36,660.—A. E. Lyman, of Williamsburgh, Mass., for Improvement in Ventilating Coffins:

I claim the indicating ventilator, as herein described and substantially set forth.

I also claim, as my invention, the combination and application and arrangement of the aforesaid apparatus and mode of applying the same for purposes as above described and substantially as set forth.

36,661.—W. W. Marsh, of St. Louis, Mo., for Improved Device for Raising Water by Steam:

I claim the combination of the cone, b, with the pipes, C A D, in the manner and for the purpose herein shown and described.

[An engraving and a full description of this invention will be published in our columns next week.]

36,662.—W. L. McDowell, of Philadelphia, Pa., for Improvement in Grates for Stoves:

I claim the combination of a draw bar with a vibrative grate so that it shall form a moving part of the same and operate substantially as described, for the purpose specified.

36,663.—Samuel McElroy, of Brooklyn, N. Y., for Improvement in Hydrants:

I claim the combination and arrangement of the vertical hydrant tube, A, adapted to any form of head, having a base, A′, chambered to take the valve motion described, with the valve-seat hub, B, and with the internal, movable valve shaft and valve, c c1 c2 c3, operated externally, substantially as described.

36,664.—James McIntyre, of New York City, for Improvement in Compound Explosive Shells:

I claim the grenades, a a, introduced between the heads, b b, and fitted so as to be rotated upon the shaft or axis, c, within the bomb shell, d, as and for the purposes specified.

36,665.—J. R. Mills, of Bloomfield, Iowa, for Improvement in Pumps:

I claim the valve, j, partition, a, bridge tree or lever, J, projection, m, and rod, k, when combined and arranged to operate in the manner and for the purpose specified, and in combination with the above the piston packing, constructed and operating substantially as described.

[This invention relates to that class of pumps which are known as lifting pumps, and which are used principally for raising water from wells, cisterns, &c., and consists, first, in a device for returning the water remaining in the discharge pipe after every operation of the pump, into the well or cistern, and thus prevent its freezing up and obstructing the pump in cold weather; and, secondly, in an arrangement for packing the pistons by the weight of the superincumbent water.]

36,666.—J. O. Montignani, of Albany, N. Y., for Improved Clothes-hanging Apparatus:

I claim a frame having between its bars pins for suspending garments, or other articles to fold, within the range of the bars, constructed and arranged substantially as described, and for the purposes set forth in the within specification.

36,667.—T. H. Murphy, of New Orleans, La., for Improvement in Hemp Brakes:

I claim the combination of the reversible aprons, d, with two sets of rotary brakers, i, flexible workers, o, and feed rollers, a a′, all constructed, arranged and operating substantially in the manner set forth, so as to operate upon opposite ends of the stalks without reversing their position.

36,668.—J. O. Norton, of Wilton, Ill., for Improvement in Harvesters for Broom Corn:

I claim, first, The combination of the horizontal main frame, a, driving wheel, c, vertical frame, f, and rear support, y z, constructed and arranged as and for the purpose set forth.

Second, The combination of the cutters, i, gatherers, j, shields, k, and discharging boxes, s, when arranged to operate substantially as and for the purpose explained.

Third, The self-opening shutter, t, connecting rod, v, and foot lever, w, when used in the manner described to control the discharge of corn from the inclined boxes, s s.

36,669.—John Pettengill, of Carrol, N. H., for Improvement in Machines for Digging Potatoes:

I claim the horizontal beak or nose, b, an inclined plane or grid, c, the endless grid, D, and the wheel, F, on the same, the deflector, H, and knives, I I, arranged and combined together, substantially in manner and so as to operate as and for the purpose specified.

36,670.—W. M. Randall and G. C. Howard, of Belleville, Ohio, for Bottom for Type Cases:

I claim the application to the case, A, of the bottom, B, arranged with blocks, c c, so as to fill each box, N N, in the case, A, as described, with the springs, D, and springs, E, and ratchet bars, F, to operate as set forth, whereby the case may be elevated or depressed, as the convenience of the operator may require, all to be used in combination for the purposes above named,

36,671.—S. H. Richardson, of Cleveland, Ohio, for Improvement in Stump Pullers:

I claim the herein described arrangement of the bed pieces, A A′ A″, in combination with the pivoted fulcrum, D, lever, C, windlass, H, pulley, K K′ and m, and rope, L, all operating as and for the purpose set forth.

36,672.—J. S. Rowell and M. F. Lowth, of Beaver Dam, Wis., for Improvement in Seeding Machines:

I claim, first, the triangular openings, d, and groove, e, in the cap, I, in combination with the seed cylinders, H, when arranged to operate in the manner and for the purpose specified.

Second, The combination of the forked or friction brace, M, with the pivot, k, for connecting the shanks, K, and consequently cultivator teeth, J, to their drag bars, L, substantially as described.

[This invention consists in a peculiar construction of caps covering the seed cylinders, whereby the danger, which has hitherto existed, of seed being crushed in passing from the hopper into the conveying tubes is entirely obviated. It also consists in the employment of a forked brace in connecting the shank or standard of the cultivator tooth to its drag bar, for the purpose of allowing the tooth so connected to yield and thus prevent its being broken or bent or otherwise injured, when brought in contact with any obstruction to large for it to remove without danger of producing the result before mentioned.]

36,673.—S. W. Ruggles, of Fitchburg, Mass., for Improvement in Stump Extractors:

I claim the combination of the sheave, K, strut, M, and rope or chain, J, with geared drums of unequal diameters, C D, substantially in the manner herein shown and described.

[This invention is based on the principle of the differential or Chinese crane, and it consists in the arrangement of two shafts or drums of unequal diameter, geared together by cog wheels, in combination with a rope or chain extending from said shafts round the sheave of a block, and with a strut or derrick from the taper of which said block is suspended, and from which a hook or chain, or other suitable device extends to the stump or other article to be extracted or raised, in such a manner that by imparting a rotary motion to the two shafts or drums, the rope or chain unwinds on one while it winds up on the other, and a considerably increased or multiplied strain can be exerted on the strut or derrick, and, through its action, on the stump or other article to be extracted or raised.]

36,674.—Gelston Sanford and J. E. Mallory, of New York City, for Improvement in Machinery for Braking and Cleaning Flax and Hemp:

We claim the combination of a grooved surface, or the equivalent thereof, with a series of chains, or the equivalent thereof, having a mode of operation substantially such as herein described, and for the purpose set forth.

36,675.—Gelston Sanford, J. E. Mallory and C. P. Hayes, of New York City, for Improvement in Machines for Breaking Flax, Hemp, &c.:

We claim giving to one or more of the fluted braking rollers a vibrating or beating motion, in combination with the rotary motion, substantially as and for the purpose specified.

And we also claim, in combination with the braking rollers or their equivalents, giving a vibrating or shaking motion to the pervious apron, substantially as and for the purpose specified.

36,676.—John Simpson and Wm. Hayden, of Tecumseh, Mich., for Improvement in Grain Cleaners:

We claim, first, The cone below the saucer by which the separation of the grain is secured and its even delivery at the moment of its being acted upon by the current of wind, exposing the largest surface both of the grain and impurities to the action of the current of wind.

Second, The combination of the several parts, as above described, in the manner and for the purpose indicated, in connection with the curb spindle and stones of an ordinary flouring mill, as well as attached to other machinery like an ordinary smutter.

Third, The double surface scourer indented from the opposite surface.

36,677.—W. D. Sloan, of New York City, for Improvement in Hoop Skirts:

I claim combining corrugated wire, suitably wrapped and formed into hoops, substantially as described, with cords, straps or other equivalent means for connecting and holding the hoops, for the purpose set forth.

36,678.—F. M. Strong and Thomas Ross, of Brandon, Vt., for Improvement in Platform Scales:

We claim in the construction of "drop lever scales," the use of the auxiliary levers, D D′ D″, in combination with the rock-shaft, K, connecting rods, E E, and links, h h, or their equivalents, the whole operating substantially in the manner described and for the purpose specified.

We also claim the use of the shields or washers, b, provided with angular ridges or projections, c, in combination with the knife edges, a, and loops, d, as set forth.

36,679.—George Tainter, of Watertown, Mass., for Improvement in Dampers:

I claim the combination of the conical damper, D, and register, C, when fitted within a drum, B, larger in diameter than the pipe or flue, A, substantially as set forth.

[This invention relates to an improvement on a ventilating damper for which Letters Patent were granted to this inventor, bearing date May 13, 1862.]

36,680.—Albert Taplin, of Providence, R. I., for Improvement in Lamps:

First, I claim the attachment of a spring to the cone or chimney holder, to secure the chimney to the same, when the chimney-holder, cone and chimney are removed from the cap for trimming and lighting the lamp, substantially as and for the purpose herein described.

Second, I claim in lamps having the cone or chimney-holder connected to the lamp cap by a hinge, making that part of the hinge attached to the chimney-holder of the same piece of metal with the holder, and that part of the hinge attached to the lamp cap of the same piece of metal with the cap, substantially as described and for the purpose set forth.

36,681.—William Terry, of Birmingham, England, for Improvement in Breech-Loading Firearms. Patented in England, April 7, 1856:

I claim the mechanical construction and arrangement of the various parts marked, D E e E′ G f H H′ I K M N O and P, herein before particularly described, set forth and represented by the illustrative sheet of drawings hereunto annexed, together with the mode of operating with the same, for the purpose of introducing the cartridge into the barrel of the firearm, and for presenting a substantial and efficient abutment for the powder to act against, for discharging the contents of the barrel from the mouth of the firearm, as above stated.

36,682.—W. O. Thomas and A. M. Miller, of Fond du Lac, Wis., for Improvement in Journal Boxes:

We claim, a new article of manufacture, consisting of a journal bo composed of limestone and metal, as herein specified.

36,683.—Theophilus Van Kaunel, of Chester, Ill., for Improved Machine for Stoning Cherries:

I claim, first, The gravitating feeding device, D, substantially as and for the purpose described.

Second, The vertically sliding receiver or concave, E f g, with a central passage, h, through it, in combination with a series of barbed needles, m, and with the gravitating feeder, D, substantially as and for the purposes described.

Third, The pivoted spring finger-piece, applied and operating substantially as described for the purpose set forth.

Fourth, The organization of the machine as described, so that it will feed the cherries separately, stone them separately, and discharge the stone in one direction, and the cherry meat or pulp in another direction, substantially as and for the purposes set forth.

36,684.—D. C. Wilson, of Painesville, Ohio, for Improvement in Tailors' Press-Board Holders:

I claim, as a new article of manufacture, a tailors' press-board holder, constructed and arranged, and being of the portable character, as herein particularly described and operating as set forth.

36,685.—T. C. Brecht, of United States Army, and S. B. Sigesmond, of Washington, D. C., assignors to themselves and John Kuliuski, of Washington, D. C., and J. H. Housewright, of New York City, for Improvement in Combined Cloak, Tent, Bed, &c.:

We claim, first, A portable tent, made of a double water and air-tight fabric, in the manner and for the purposes substantially as specified.

Second, We claim the herein described arrangement for changing a cloak into a *tente d'abri*, hammock, ambulance and life-preserver.

Third, We claim a combined cloak, tent, hammock, ambulance and life-preserver, constructed substantially as herein described.

36,686.—M. L. Callender (assignor through mesne assignments to C. H. Welling) of New York City, for Improvement in Compound Explosive Projectiles:

I claim a projectile, having a steel bar or center inserted on a line with its axis, when said bar contains an independent exploding magazine.

Second, I claim the combination in a projectile of a discharging chamber and penetrating bar of steel, or similar metal having an exploding magazine within it, and supplied with a percussion and fuse apparatus, for the purpose and in the manner as set forth.

36,687.—W. D. Grimshaw, of Newark, N. J., assignor to himself and C. A. Ten Eyck, of New York City, for a Washing Machine:

I claim the arrangement of the pairs of washing machine rollers, c

c, and squeezing rollers, f f, in the manner specified, so that the power to revolve said rollers is applied to tbe two middle rollers while the upper and lower rollers are yielding, for the purposes set forth.

36,688.—H. B. Morrison, of Mount Morris, N. Y., assignor to C. H. Morrison, of Le Roy, N. Y., for Improvement in Nozzles for Hose and Pipes:

I claim, first, The revolving or adjustable tips, J K, applied to A F, of hose or water pipes, as and for the purpose set forth.

Second, The arrangement of the nuts, B E, thimble, C, sleeve, D, when used in combination with the nozzles, A F, and sleeve, G, to operate as and for the purpose herein described.

[The object of this invention is to obtain a nozzle for hose and water discharge pipes, which will be capable of directing the stream of water in various directions, and also capable of discharging either one or two streams as may be desired.]

36,689.—G. H. Smith (assignor to S. O. Smith), of Rochester, N. Y., for Improvement in Illumination:

First, I claim the use of common atmospheric air, in the place of oxygen gas in the combustion of illuminating gas or its equivalent, for the production of a high degree of heat, when such atmospheric air has been previously heated, and in that condition, is forced by means of properly arranged jets, into intimate contact with the illuminating gas at the moment of combustion, substantially in the manner herein above set forth.

Second, The use of common atmospheric air, in the place of oxygen gas in the combustion of illuminating gas or its equivalent, for the production of an intense degree of light, when such atmospheric air has been previously heated, and in that condition, is forced by properly arranged jets, into intimate contact with the illuminating gas, at or before the moment of combustion, both being at the same time made to impinge upon a suitable piece of lime or other known equivalent, substantially in the manner above described.

Third, The use of common atmospheric air, in the combustion of illuminating substances, such as illuminating gas, oils or hydrocarbons or their equivalents, for the production of an increased degree of light, when such atmospheric air has been previously heated, and in that condition, is brought in intimate contact with any of said illuminating substances, at or before the moment of combustion.

36,690.—James Ward (assignor to himself and I. F. Hunnewell), of Boston, Mass., for Improvement in Brick Machines:

I claim the arrangement of the pulverizing and pressing rollers, I I, in combination with the revolving series of molds; when geared and operated conjointly in the manner and for the purpose specified.

36,691.—J. S. Hall, of Pittsburg, Pa., for Improvement in Machine for Forging, Bending and Shaping Plowshares:

I claim, first, The die, B, for drawing down, beveling and shouldering the blank, substantially as and for the purpose herein described.

I also claim in combination, the dies, C D, for griping, bending and forming the plowshare, when constructed and operating substantially as herein described.

36,692.—Suspended.

36,693.—D. B. Chapman (assignor to himself and E. D. Draper), of Milford, Mass., for Improvement in the Manufacture of Soap:

I claim the combination of a carbonate or caustic soda, with an alkaline silicate and vegetable flour, combined with soap or a saponified oil or fat, substantially as described.

RE-ISSUE.

1,346.—E. A. and W. Tuttle, and J. S. Bailey, of New York City, assignees of the administrators of C. F. Tuttle, deceased, for Improvement in Hot-Air Registers. Patented January 23, 1849:

We claim the application of the upright or vertical wheel, G, or part or segment of a wheel to the opening and closing of hot-air registers or ventilators; the edge or periphery of which wheel is so placed as to adapt it to be operated on by the foot if desired, substantially as set forth.

[The nature of this invention consists in the new and improved method adopted in opening and closing the register or ventilator by means of an upright vertical wheel, or a segment of a wheel which is connected with and gives motion to the valves.]

DESIGN.

1,663.—Matthew Townsend, of Chelsea, Mass., for a Design for the Border of Shawls, &c.

NOTE:—In the above list of claims we recognize the names of TWENTY-ONE patentees whose papers were prepared at the Scientific American Patent Agency.—EDS.

INVENTIONS EXAMINED at the Patent Office and advice given as to the patentability of inventions, before the expense of an application is incurred. This service is carefully performed by the Editors of this Journal, through their Branch Office at Washington, for the small fee of $5. A sketch and description of the invention only are wanted to enable them to make the examination. Address MUNN & COMPANY, No. 37 Park-row, New York.

PATENTS FOR SEVENTEEN YEARS.

The new Patent Laws enacted by Congress on the 2d of March, 1861, are now in full force, and prove to be of great benefit to all parties who are concerned in new inventions.

The duration of patents granted under the new act is prolonged to SEVENTEEN years, and the government fee required on filing an application for a patent is reduced from $30 down to $15. Other changes in the fees are also made as follows:—

On filing each Caveat	$10
On filing each application for a Patent, except for a design	$15
On issuing each original Patent	$20
On appeal to Commissioner of Patents	$20
On application for Re-issue	$30
On application for Extension of Patent	$50
On granting the Extension	$50
On filing Disclaimer	$10
On filing application for Design, three and a half years	$10
On filing application for Design, seven years	$15
On filing application for Design, fourteen years	$30

The law abolishes discrimination in fees required of foreigners, excepting reference to such countries as discriminate against citizens of the United States—thus allowing Austrian, French, Belgian, English, Russian, Spanish, and all other foreigners except the Canadians, to enjoy all the privileges of our patent system (except in cases of designs) on the above terms.

During the last sixteen years, the business of procuring Patents for new inventions in the United States and all foreign countries has been conducted by Messrs. MUNN & CO., in connection with the publication of the SCIENTIFIC AMERICAN; and as an evidence of the confidence reposed in our Agency by the Inventors throughout the country, we would state that we have acted as agents for more than FIFTEEN THOUSAND Inventors! In fact, the publishers of this paper have become identified with the whole brotherhood of Inventors and Patentees at home and abroad. Thousands of Inventors for whom we have taken out Patents have addressed to us most flattering testimonials for the services we have rendered them, and the wealth which has inured to the Inventors whose Patents were secured through this Office, and afterward illustrated in the SCIENTIFIC AMERICAN, would amount to many millions of dollars! We would state that we never had a more efficient corps of Draughtsmen and Specification Writers than are employed at present in our extensive Offices, and we are prepared to attend to Patent business of all kinds in the quickest time and on the most liberal terms.

The Examination of Inventions.

Persons having conceived an idea which they think may be patentable, are advised to make a sketch or model of their invention, and submit it to us, with a full description, for advice. The points of novelty are carefully examined, and a reply written corresponding with the facts, free of charge. Address MUNN & CO., No. 37 Park-row, New York.

Preliminary Examinations at the Patent Office.

The advice we render gratuitously upon examining an invention does not extend to a search at the Patent Office, to see if a like invention has been presented there, but is an opinion based upon what knowledge we may acquire of a similar invention from the records in our Home Office. But for a fee of $5, accompanied with a model or drawing and description, we have a special search made at the United States Patent Office, and a report setting forth the prospects of obtaining a Patent &c., made up and mailed to the Inventor, with a pamphlet, giving instructions for further proceedings. These preliminary examinations are made through our Branch Office, corner of F and Seventh-streets, Washington, by experienced and competent persons. More than 5,000 such examinations have been made through this office during the past three years. Address MUNN & CO., No. 37 Park-row, N. Y.

How to Make an Application for a Patent.

Every applicant for a Patent must furnish a model of his invention s susceptible of one; or if the invention is a chemical production, he must furnish samples of the ingredients of which his composition consists, for the Patent Office. These should be securely packed, the inventor's name marked on them, and sent, with the government fees by express. The express charge should be prepaid. Small models from a distance can often be sent cheaper by mail. The safest way to remit money is by draft on New York, payable to the order of Munn & Co. Persons who live in remote parts of the country can usually purchase drafts from their merchants on their New York correspondents; but, if not convenient to do so, there is but little risk in sending bank bills by mail, having the letter registered by the postmaster. Address MUNN & Co., No. 37 Park-row, New York.

Foreign Patents.

We are very extensively engaged in the preparation and securing of Patents in the various European countries. For the transaction of this business, we have offices at Nos. 66 Chancery-lane, London; 29 Boulevard St. Martin, Paris; and 26 Rue des Eperonniers, Brussels. We think we can safely say that THREE-FOURTHS of all the European Patents secured to American citizens are procured through our Agency.

Inventors will do well to bear in mind that the English law does not limit the issue of Patents to Inventors. Any one can take out a Patent there.

Circulars of information concerning the proper course to be pursued in obtaining Patents in foreign countries through our Agency, the requirements of different Patent Offices, &c., may be had gratis upon application at our principal office, No. 37 Park-row, New York, or either of our Branch Offices.

Rejected Applications.

We are prepared to undertake the investigation and prosecution of rejected cases, on reasonable terms. The close proximity of our Washington Agency to the Patent Office affords us rare opportunities for the examination and comparison of references, models, drawings, documents, &c. Our success in the prosecution of rejected cases has been very great. The principal portion of our charge is generally left dependent upon the final result.

All persons having rejected cases which they desire to have prosecuted are invited to correspond with us on the subject, giving a brief story of the case, inclosing the official letters, &c.

Assignments of Patents.

The assignment of Patents, and agreements between Patentees and manufacturers, carefully prepared and placed upon the records at the Patent Office. Address MUNN & CO., at the Scientific American Patent Agency, No. 37 Park-row, New York.

It would require many columns to detail all the ways in which the Inventor or Patentee may be served at our offices. We cordially invite all who have anything to do with Patent property or inventions to call at our extensive offices, No. 37 Park-row, New York, where any questions regarding the rights of Patentees, will be cheerfully answered.

Communications and remittances by mail, and models by express (prepaid), should be addressed to MUNN & CO., No. 37 Park-row, New York.

Back Numbers and Volumes of the Scientific American.

VOLUMES I., II., III., IV., V., VI. (NEW SERIES) COMplete (bound or unbound) may be had at this office and from all periodical dealers. Price, bound, $1 50 per volume, by mail, $2—which include postage. Price, in sheets, $1. Every mechanic, inventor or artizan in the United States should have a complete set of this publication for reference. Subscribers should not fail to preserve their numbers for binding. Numbers 3, 4, 6, 8, 9, 10, 11, 12 and 16, of Vol. VI. are out of print and cannot be supplied

Binding.

We are prepared to bind volumes in handsome covers, with illuminated sides, and to furnish covers for other binders. Price for binding, 50 cents. Price for covers, by mail, 50 cents; by express, or delivered at the office, 40 cents.

Notes and Queries

A. E. L., of N. Y.—An indelible red printing ink similar to the permanent red color on calicoes cannot be obtained, as the fast madder color of calico is dyed on the goods. You can make a black printing ink that will withstand washing with cold soap-suds by using a strong solution of logwood and copperas thickened with gum About one ounce of copperas is sufficient for one pound of the extract of logwood. A strong decoction of Brazil wood to which is added a few drops of the muriate of tin, the whole being thickened with gum, will also make a red ink capable of withstanding washing with cold soap-suds when printed on cotton or woolen fabric, but not on paper. The colors when printed should be thoroughly dried in a warm apartment.

G. W. B., of Conn.—Toilet soap is made by boiling lard for a long period in caustic soda. It is scented with any of the essential oils. Lard does not make such a hard soap as suet; 9 parts of white mutton suet and 1 of olive oil boiled in caustic soda makes a beautiful toilet soap. Transparent soap is produced by dissolving common hard soap in alcohol, then drying it. Much of the toilet soap used is made by scenting common hard soap with the essential oils of lavender, bergamotte and rosemary.

G. M. D., of Mich.—In 1859 a series of experiments were made upon a railway in England, by Wm. Fairbairn, F. R. S., to test the retarding force of two continuous self-acting brakes. From three experiments with Newall's brake, speed from 50 to 51½ miles per hour, the retarding force was equivalent to 440·3 pounds per tun weight of the train. From three similar experiments with Fay's brake, the retarding force was 408·6 pounds per tun. The power required for brakes operating to stop cars going at a certain velocity depends almost entirely upon the space in which the train has to be stopped. With these two brakes exerting the retarding power a train running at the rate of 20 miles per hour could be stopped in a space of 23·4 yards; at a speed of 30 miles per hour in 52·9 yards; at 40 miles per hour in a space of 93·8 yards. Mr. Fairbairn read a long paper detailing an account of the experiments before the Association for the Advancement of Science in 1859.

C. F. P., of Md.—Your perpetual motion, like all similar devices, is based on an erroneous principle. If you draw a sketch of it in its most unfavorable position, you will see the truth of our statement at once, but if you cannot convince yourself by a drawing, you can very easily make a small model. Your cartridge appears to be novel, and we think a patent may be obtained for it.

J. B. C., of Ill.—A beautiful varnish for workboxes, straw, &c., may be made with gum sandarach, 6 ounces; gum elima, 4 ounces; gum animi, 1 ounce; camphor, ½ ounce, dissolved in a quart of rectified alcohol. All spirit varnishes are liable to crack. Gum arabic dissolved in water is sometimes applied to straw to give it a gloss, but it is soluble in water and is therefore easily washed off.

A. F. O., of N. Y.—We suppose astronomers are generally satisfied with the art of "graduation" as it is. We are aware that the division of circular arcs into degrees, minutes, &c., requires the application of great practical skill. In Brewster's "Encyclopedia," the article on "Graduation" contains a very full account of the method of dividing astronomical and other instruments.

A. S. R., of N. H.—Common resin may be dissolved in boiling linseed oil, and when thinned with turpentine it makes a good common varnish, but liable to be sticky. Most resins will dissolve in turpentine and alcohol, and will thus make varnishes also; but all varnishes made with alcohol are liable to crack, and those produced with turpentine remain "tacky" for a long period after they are put on. A strawberry-colored stain may be made for white beech wood with a very strong decoction of Brazil wood and a little alum. If you wish to obtain a clear stain, mix the color with lac varnish; but if the stain is required to be dull, mix a little gum arabic with the red decoction.

Money Received

At the Scientific American Office on account of Patent Office business, from Wednesday, October 15, to Wednesday, October 22, 1862:—

T. G. W., of N. Y., $22; T. D. L., of N. H., $20; W. F. R., of R. I., $45; L. F. H., of N. Y., $20; H. S. R., of N. Y., $20; W. S., of N. Y., $40; G. L., of N. Y., $40; T. R. T., of Mass., $40; I. H. I., of Ill. $45; T. J., McG., of Ohio, $20; S. A. P., of Mass., $20; S. J. M., of Ohio, $45; T. J. K., of Ohio, $20; M. C., of N. Y., $40; J. H. B., of N. J., $20; H. & D., of Iowa, $40; J. G., of N. Y., $20; J. C. McK., of Ill., $20; J. W., of N. J., $40; J. R., of N. J., $22; J. N., of England, $20; J. W. S., of N. Y., $15; T. D. L., of N. H., $15; I. B., of Ind., $15; G. M. C., of Cal., $27; D. W. C., of N. Y., $15; V. H., of N. Y., $30; P. C. S., of N. Y., $120; W. R. G., of N. Y., $20; T. & P., of Conn., $30; W. J. W., of N. Y., $15; T. J. D., of N. Y., $20; J. F. H., of Mich., $25; H. B., of Mich., $15; W. L. C., of Iowa, $7; J. B. C., of N. Y., $30; F. M. C., of N. Y., $15; R. B., of Mich., $25; J. C. C., of Mass., $25; C. H. R., of N. Y., $15; C. & W., of Ind., $15; H. D. S., of N. Y., $40; A. L. F., of N. Y., $25; P. D., of Iowa, $15; N. & D., of N. Y., $15; E. B. R., of N. J., $25; T. & E., of Pa., $20; J. C. M., of Conn., $25; G. R., of N. Y., $25.

Persons having remitted money to this office will please to examine the above list to see that their initials appear in it, and if they have not received an acknowledgment by mail, and their initials are not to be found in this list, they will please notify us immediately, and inform us the amount, and how it was sent, whether by mail or express.

Specifications and drawings and models belonging to parties with the following initials have been forwarded to the Patent Office from October 15, to Wednesday, October 22, 1862:—

T. G. W., of N. Y.; J. W., of N. J.; M. C. of N. Y.; G. L., of N. Y.; J. C. C., of Mass.; A. L. F., of N. Y.; T. & E., of Pa.; E. B. R., of N. J.; E. B., of Ill.; T. J. D., of N. Y.; J. C. M., of Conn.; T. & P., of Conn.; G. M. C., of Cal.; G. R., of N. Y.; J. F. H., of Mich.; M. L. C., of Iowa.