

**The Public Clocks of New York.**

Mr. D. W. Bradley, City Timekeeper, lately read an interesting paper upon Tower Clocks, before the American Institute, in which were the following remarks:—

"With all due deference to the philosopher who said that time is money, I would observe that time is improvement, progress, science, art; and on the other hand it is idleness, dissipation, poverty, decay, ruin. As for its being money, let me remark that I have been experimenting with it these thirty years, and have never succeeded in making it yield more than enough to keep soul and body together. We visit St. Paul's. The bell was new a year ago. The old one got cracked, and they set a man to boring the crack out. He worked a week or two, and nearly froze to death, and when he finished his work it was found that the crack was larger than ever before. So they put in a new bell. The frame of the clock stands five feet long, two feet three inches wide, and four feet high. The pendulum is of wood, 13 feet long, giving 32 beats, and the ball weighs 75 pounds.

"St. John's clock was built by Henry Harris, London, in 1812. It is nearly similar to St. Paul's, but is better finished, and has the worst escapement I ever saw.

"The clock of the Dutch Reformed Church, Fifth avenue and Twenty ninth street, and that of St. Mark's, were made by Stokell. They are both like the clock of St. Paul's, though smaller and better. Stokell made some of the best regulators in this country.

"Trinity clock is the heaviest in America. The frame stands 9 feet long, 5 high, and 3 wide. The barrels are 20 inches, turning three times in 24 hours. The winding wheels are driven by a pinion and arbor. On the latter is placed a jack, or a wheel, a pinion, and a crank; 850 turns of the crank are required to draw up each of the weights. It takes 700 feet of 3-inch rope for the three cords; and the winding up of the weights consumes more than an hour of time, and requires the labor of two men. The pendulum is 18 feet long, and makes 25 beats. I cannot think that Mr. Rogers had a correct notion of what he was going to do when he began the building of this clock. At first it would not run 7 days, and he was obliged to put in new main wheels. The clock was at last finished, and an agreement was made with the sexton's son that he should receive 25 cents whenever it stopped, provided he at once notified the timekeeper; but as it stopped every day, and frequently three or four times a day, the expense of feeding the informer became irksome to bear, and the cumbersome timepiece was placed in new hands. By this time it had gained a poor reputation, which clings to it even in our day. The weights are 800, 1,200, and 1,500 pounds respectively, and drop 50 feet. A large box is placed at the bottom of the well, which holds about a bale of cotton waste to check the fall of a weight in case of accident. Two years ago I wound it up on Saturday, and on Sunday morning the chiming cord broke, letting the 1,500 pound weight fall a distance of 50 feet, causing much damage. The cotton box was strongly braced on all sides, but the force of the blow burst it open. The contents were well scattered, otherwise the organ bellows, just in line below, would have contracted under a pressure somewhat greater than that which the "blower" was accustomed to exert upon them. A much better clock could be built of the metal contained in the frame and main wheels of Trinity's. None of these clocks keep accurate time. Trinity does best, the clock of the Dutch Reformed Church next. During the late heavy snow storm the north window in the clock-room of St. Paul's was blown open. The snow came in, partially covered the movement, and drifted down into the box to the depth of several inches, nearly covering the ball; yet the old pendulum waded through it with the glee of a school-boy, and stowed the snow on this side and that, and pelted it with such pertinacity that by the next morning the clock was 15 minutes ahead of time. The first warm day that followed, it fainted, and stopped running. There was an old German clock on the Post Office, but it was removed a long time ago. It had but one hand. Old St. George's clock is about 50 years old. It is smaller than the others, but has gained a reputation for accuracy. Twenty years ago a person who had not St. George's time was supposed, like a busy man, to have no time at all. As it is soon to be pulled down no care is taken of its inside, and the figures on the dial are grown so rusty that the time can only be guessed at. At the City Hall we find a good clock. The pendulum, 15 feet long, vibrates in 2 seconds. The ball weighs 300 pounds. To counteract the effect of heat and cold the compensation principle has been applied to this pendulum. The contraction of the iron rods which would draw up the ball is opposed by the greater contraction of the brass bar on which the ball rests, thus letting it down. When the rods expand the greater expansion of the brass bar lets it down—only it don't—that is, not yet. I regulated it from June 1866, to February 1867, without moving the hands, but after the latter date, for three or four months, I set it every week although the variations never exceeded 30 seconds. The pendulum has not lost one vibration in more than two years. The new clock of St. George's, Sixteenth street, has never been excelled in finish. The frame is 8 feet long, 3 wide and 7 high. The main time wheel is 3 feet in diameter, has 180 teeth, turns once in 12 hours, has the figures on its face, and a pointer marking the hour. The second wheel is 27 inches, has 300 teeth, revolves every hour, and has the minutes on its face. The third wheel turns once in three minutes, and has the seconds pointed off on it. The pendulum is 35 feet long, and vibrates in three seconds, and the ball, weighing 390 pounds, is four feet in length by seven inches diameter. Two pinions and three wheels constitute all the machinery of this clock. Trinity's has five pinions and ten wheels. A duplicate of this clock is now being put up in the new arsenal at Rock Island. The clocks in the

Brick Church and that in St. Therese are small but good ones, if attended to. They are cared for by the sextons, and get no care at all. A gentleman from Pennsylvania was lately telling me about his wonderful one, which did not vary 15 seconds in a year. On questioning him as to the observations he was in the habit of taking, he remarked that he took observations every day, by a noon-mark cut in the floor of his back porch. The clock of the Third-avenue Railroad depot is a fine instrument. It is exposed to a greater range of heat and cold than any other clock in the city, yet keeps excellent time."

[We gave a detailed description of the "new clock of St. George's, Sixteenth street," on page 80, Vol. XV., SCIENTIFIC AMERICAN. The finish of that clock and the beauty of its construction is probably not excelled by any in this country, whether of domestic or foreign manufacture.—EDS.]

**OFFICIAL REPORT OF PATENTS AND CLAIMS**

Issued by the United States Patent Office

FOR THE WEEK ENDING JANUARY 14, 1868.

Reported Officially for the Scientific American.

PATENTS ARE GRANTED FOR SEVENTEEN YEARS, the following being a schedule of fees:—

|  |      |
|--|------|
| On filing each caveat  | \$10 |
| On filing each application for a Patent, except for a design | \$15 |
| On issuing each original Patent                              | \$30 |
| On appeal to Commissioner of Patents                         | \$50 |
| On application for Reissue                                   | \$50 |
| On application for Extension of Patent                       | \$50 |
| On granting the Extension                                    | \$50 |
| 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)            | \$20 |
| On filing application for Design (seventeen years)           | \$25 |
| On filing application for Design (twenty years)              | \$30 |

In addition to which there are some small revenue-stamp taxes. Residents of Canada and Nova Scotia pay \$500 on application.

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.

- 73,220.—HOLDER FOR DRYING GLUE.—William Adamson, Philadelphia, Pa. I claim the within-described holder on which to dry glue, the said holder consisting of cords, wires, strips or sheets of suitable material saturated or coated with paraffine, or its equivalent, for the purpose specified.
- 73,221.—CONNECTING THE TUBES WITH THE HEADS OF SURFACE CONDENSERS.—Horatio Allen, New York city. I claim, 1st, Making one of the tube heads of greater thickness than the other horizontal face or bearing, e, with a shoulder, as described.
- 73,222.—HORSE HAY FORK.—D. W. Amos, Broad Top City, Pa. I claim, 1st, The combination substantially as described of pivoted tines, A, link rods, E, and a spreading link, D, with a tripping latch and hoisting chain, B, for the purpose set forth.
- 73,223.—HORSE HAY FORK.—Lewis Atwater, Ithaca, N. Y. I claim, 1st, The tines, C, D, constructed in the form of hooks at their upper ends and branching below the said hooks to a broad bearing support near their center and to double prongs at their lower ends, all in one piece, substantially as set forth.
- 73,224.—CULTIVATOR.—A. Bennett, Rockford, Ill. Antedated January 4, 1868. I claim, 1st, The hitching iron, a, in combination with the plow beams, C, C, and the front cross beam, D, arranged and operating substantially as and for the purpose herein described.
- 73,225.—SHEEP WASH.—E. B. Booth, St. Louis, Mo. I claim a sheep wash composed of the ingredients above named, or their equivalents.
- 73,226.—SAW.—E. M. Boynton, Grand Rapids, Mich. I claim an improvement in the construction of saws providing them with the gaging and clearing teeth, B, consisting of the inclined points, c, and the bearing, e, substantially as shown and described.
- 73,227.—SAW TANG.—E. M. Boynton, Grand Rapids, Mich. I claim the detachable saw tang consisting of the socket, A, with the arm, B, having the groove, n, formed in its under side in combination with the slotted bolt, D, and the thumb nut, E, substantially as described.
- 73,228.—SHOE HOLDER.—A. N. Breneman, Lancaster, Pa. I claim the arrangement of the toe and heel pieces, A, B, when connected by a hinge, C, in combination with the sliding wedge and band, D, E, or its equivalent, for separating the parts below, substantially in the manner and for the purpose specified.
- 73,229.—SPIROMETER.—G. W. Brown, Rockford, Ill. I claim, 1st, The arrangement of splanometers and index, H, and shield, I, in the manner specified and for the purpose as described herein.
- 73,230.—STRAP HOLDER.—H. W. Burgess, Ithaca, N. Y. I claim, 1st, The construction of the strap holder when the said surfaces of the strap are in the bent piece of the bed of opposing piece or part, A, are made to be a part or section of the volute curve, F, as figured and described.
- 73,231.—SHOVEL PLOW.—H. C. Chandler, Erie Township, Ind. I claim, 1st, The notched beam at D, for the purpose of adjusting the bands to the desired light, by a bolt passing through them and the notch.
- 73,232.—BALANCED FEED WATER VALVE.—Geo. E. Chenovert, Baltimore, Md. I claim, in combination with the valve, valve-stem, and passages, an elastic, impermeable diaphragm, and air chamber underneath it, for the purpose of holding the valve in a balanced condition in any of the positions of the valve, substantially as herein described and represented.
- 73,233.—APPARATUS FOR DETERMINING DEVIATION OF LOCOMOTIVE CRANK PINS FROM TRUE CENTER.—Chas. J. Clifford, New Hampton, N. J. I claim the instrument for ascertaining, without quartering or centering, whether or not crank pins on locomotive driving wheels are bent or sprung, constructed with the arms, a, feet, b, brace, c, adjusting screws and spring, marking point, fig. 2, all arranged and combined substantially as shown and specified.
- 73,234.—POLE ATTACHMENT.—Geo. N. Compton, Canton, O. I claim, 1st, The combination of the pole, L, with the pins, a, a, and the ring, G, the whole forming the ring pieces, L, G, shown in fig. 6, in the manner and for the purpose herein specified.
- 73,235.—CORSET.—Clara Z. Cummings, Buffalo, N. Y. Antedated Dec. 28, 1867. I claim a corset having a portion of its back formed of elastic goods, B, and provided with elastic buckle straps, C and D, for the purposes and substantially as described.
- 73,236.—CART HARNESS.—P. K. Currell, Elk Ridge Landing, Md. I claim a cart harness saddle, provided with the lever, D, pivoted in the upper end of a bolt, C, said bolt being arranged to turn loosely in the cross-piece, A, all constructed and arranged to operate substantially as shown and described.
- 73,237.—LOOM.—John Deakin, Gloucester, N. J., assignor to himself and D. and C. Kelly, Philadelphia, Pa. I claim the combination and arrangement of the heddle levers, pattern chain, and adjustable cams, with levers, E, H, or their equivalents, the whole being constructed and operating substantially as specified.
- 73,238.—CIRCULAR SAW.—Henry Disston, Philadelphia, Pa. I claim circular saw, every tooth of which has its back edge so formed in the arc of a circle, having a center eccentric with the center of rotation of the saw, that the sharpening of each tooth may be effected by reducing the front edge in a spiral course, as herein set forth.
- 73,239.—SAW GUMMING MACHINE.—Thos. S. Disston (assignor to Henry Disston), Philadelphia, Pa. I claim, 1st, The rotary cutter, G, arranged to revolve in disks, adapted to and admitting of being turned in a suitable frame secured to the saw, all substantially as described for the purpose specified.
- 73,240.—REGULATOR FOR TIME PIECES.—Samuel F. Estell, Richmond, Ind. I claim the combination of the regulating lever, C, having a slotted end, in combination with screw, F, and nut, E, substantially as described, and for the purpose set forth.
- 73,241.—AMALGAMATOR.—A. L. Fleury, New York city. I claim the herein described amalgamator, constructed and operating substantially in the manner set forth.
- 73,242.—BUCKLE.—George L. Gerard (assignor to himself and David Forbes), New Haven, Conn. Antedated Dec. 28, 1867. I claim the combination of the central bar, f, and bars, h, h', and the ribs, r and s, the whole constructed and arranged so as to operate in the manner specified.
- 73,243.—MACHINE FOR SCOLLING LEATHER.—Andrew Goodyear, Albion, Mich. I claim, 1st, A cutting-edged disk, A, with radial corrugations or other ornamental shaped indentations formed around it on both its faces next the periphery, substantially in the manner and for the purpose herein described.
- 73,244.—NECK TIE FASTENING.—Robert A. Goodyear, New Haven, Conn. Antedated Dec. 28, 1867. I claim the spring clasp, c, formed as shown at 1, for grasping the button, and so bent at or near the hinge, h, of the plate, a, that a spring is produced for keeping the plate, a, toward the clasp, as and for the purposes set forth.
- 73,245.—ANTI-FRICTION BEARING FOR MACHINERY.—John Hardin, Chicago, Ill. I claim the glass bearings, B, in combination with the working parts of machinery, A, flexible seat, d, arranged as set forth and for the purposes specified.
- 73,246.—COMPOSITION FOR PRESERVING WOOD, METAL, CANVAS, ETC.—Louis Harmyer, Cincinnati, Ohio. I claim the composition itself, and the manner and process of compounding and using the same, substantially as herein set forth.
- 73,247.—AUTOMATIC ALARM FOR GRIST MILLS.—M. W. Helton and J. H. Redfield, Bloomington, Ind. I claim, 1st, The apparatus substantially as described, and which is constructed so that when applied to mill machinery and properly adjusted thereto, it will automatically give an alarm at the proper time for changing the sacks, for the purpose set forth.
- 73,248.—HORSE RAKE.—Benj. F. Horton, Ithaca, N. Y. I claim, 1st, The arrangement of the teeth, and the knobs projecting from the lower sides of the timbles, B, substantially as described.
- 73,249.—SODA FOUNTAIN.—John S. Hull, Cincinnati, Ohio. I claim the soda fountain, G, tubes, H, I and J, and cooler, E, combined and arranged for ejecting the water by compressed air forced into the water reservoir, substantially as described.
- 73,250.—STEAM GENERATOR WATER GAGE.—John S. Hunter, Hartford, Conn. I claim the arrangement of the three-way cocks, b and c, with their respective outlets, G, in combination with the tube, E, the connections, D, so as to operate substantially in the manner and for the purpose herein set forth.
- 73,251.—MACHINE FOR HUSKING CORN.—H. W. Knowlton, Saratoga Springs, N. Y. Antedated Jan. 1, 1868. I claim the combination of the rollers, C, D, with the elastic aprons, K, on the rollers, I, L, substantially as and for the purpose set forth.
- 73,252.—GENERATING ILLUMINATING GAS.—Ferdinand King (assignor to himself and Charles W. Neudecker), Richmond, Va. I claim, 1st, The method herein described of generating or producing illuminating gas.
- 73,253.—PUMP.—James McBride, Flint, Mich. I claim an inclosee annular space around the pump cylinder, deriving a supply of air from the well, substantially as and for the purpose described.
- 73,254.—ANIMAL TRAP.—Oliver Metcalf, Salem, Ind. I claim, 1st, The combination of a catch, a, upon a hinged door, A', with the catch rods, c, upon the revolving platform, C, substantially as described.
- 73,255.—PEN.—Wm. A. Morse, Philadelphia. I claim a fountain union pen, made of two parts, a and f, the same being adjustable, and connected, substantially as described and shown, for the purpose specified.
- 73,256.—HAND LOOM.—Jas. E. Nute and Geo. H. Hathorn, Lincoln, Me. I claim, 1st, The combination with the loom frame of the pivoted arms a', warp beam, C, rod, c', and screw nut, e', or equivalent, secured to the frame, substantially as described.
- 73,257.—FENCE.—E. F. Olds, Brighton, and Warren Clark, Green Oak, Mich. We claim the special arrangement of the braces, C, in combination with the posts, B, when the said braces are connected to the post and to each other in manner and for the purpose substantially as described.
- 73,258.—BRICK MACHINE.—S. J. Parker, Ithaca, N. Y. I claim, 1st, The perpendicular adjustable cam, C, in connection with the plungers and movable wheel, arranged and operating together as shown and described.
- 73,259.—APPARATUS FOR THE MANUFACTURE OF STANG.—John A. Owens, Little Falls, N. Y., assignor to himself and Henry I. Petrie. I claim, 1st, The tank, A, with the shaft and arms, A', constructed and operating as described, and for the uses and purposes mentioned.
- 73,260.—APPARATUS FOR THE MANUFACTURE OF STANG.—John A. Owens, Little Falls, N. Y., assignor to himself and Henry I. Petrie. I claim, 1st, The tank, A, with the shaft and arms, A', constructed and operating as described, and for the uses and purposes mentioned.





