London Water Pipes.

The first instance on record of water being conveyed to the city of London by means of pipes is in the year 1236. Before this time, according to Maitland, the city and places adjacent were supplied by the "river of wells," in the west part; whose decay was owing to certain mills erected on the banks thereof by the Knights of St. John, which obstructed its navigation, and by degrees gave it the name of Turnmill Brook, a name which is still preserved in Turnmill street, through part of which this water took its course towards the bottom of Holborn Hill, and thence into the Thames between the Fleet and St. Bride's. In process of time, Turnmill Brook was lost in the name of Fleet Ditch, or Fleet Dyke.

The other waters were Oborn or Holborn, Wall Brook, and Langbourn. Besides these bourns or brooks were several springs which supplied the city, as Holywell, a fine spring famed for its miraculous virtues in superstitious times; Clerk's or Clerkenwell, Skinner's Well, Fogg's Well, Tod's Well, Loder's Well, Crowder's Well, and Rad-Well, and the Horsepool or Horsepond in Smithfield. These several springs, or most of them united their streams, and formed the "river of wells" before mentioned.

In the year 1236, in consequence of a great want of water prevailing in London, occasioned principally by the encroachment of buildings and the Mills of the Knights of St. John, before referred to, on the fresh water canals about the outskirts of the city, many opulent citizens contributed liberally to the inauguration of a scheme for bringing water by means of main pipes from six fountains in the neighboring town of Tyburn, and this product was eventually carried into execution.

Hugh Myddelton, a worthy and enterprising citizen, carrying on the business of a goldsmith, who, after several others had attempted it without success, put into execution the design of supplying London with water for domestic use, by means of a river cut through the country from Chadwell and Amwell, near Ware, in Hertfordshire, to a basin or reservoir near Islington, on the north side of London. This work was begun on February 20, 1608, "and with great difficulty, art, and industry, and a prodigious expense," with the assistance of King James I., was completed, and the water let into it, on Michaelmas day, 1613. The source of the New River is twenty miles from London, but the measurement of the original stream, followed throughout its devious windings, necessary to preserve its level, and to some extent, also, owing to the stubborn opposition of certain of the landed proprietors, was 48 miles 3 quarters and 16 poles. Its length has been reduced, at different times, to about 28 miles, by cutting off the loops. On the completion of the work, Mr. Myddelton was knighted, and afterwards created a baronet. The stupendous undertaking eventually produced immense profits to the fortunate proprietors of its shares, but the original projector was all but ruined by the expenses he incurred in bringing it to a conclusion.

The successful completion of the New River marked an era in the history of the science of engineering in England; and the abundant supply of one of the chief necessaries of life, which it afforded to the population of the metropolis, led to the development of the method of conveying water by means of pipes to the doors and into the dwellings of the inhabitants.

The main pipes used at that early day were sheet lead, turned on a mandrel, and soldered at the edges, and the trunks of elm trees, bored with augers, and left in their natural undressed condition outside. Other water companies were established in the course of time, till at the present day there are eight of these supplying London from various sources.

Gas began to be supplied through pipes in 1807.

French Workmen at the Exposition.

Ten thousand dollars have been appropriated by the Commissioners of the Paris Exposition of 1878 in aid of artisans who have meritorious objects to exhibit, constructed by their own hands, and who are working for their own account, but who are unable to defray the expense of exhibition from their own resources. The prefects of each of the 86 departments are to supervise the applications under this head.

THE royal tigress in the Berlin Zoological Gardens lately brought forth a litter of two, which she utterly refused to take care of. They were accordingly placed amidst the family of a Newfoundland dog, who welcomed the newcomers warmly, and bestows upon them all necessary maternal attentions.

DECISIONS OF THE COURTS.

United States Circuit Court—Northern District of Illinois.

TRUNK PATENT.—HERMAN VOGLER *vs.* EDWARD SEMPLE.

[In equity.—Before Blodgett, J.]

The claim in a patent must be for something described in the specification, so that any person of ordinary mechanical skill, or skill in the art covered by the patent, can, from the specification, make a mechanism which will contain the claim.

The purpose of a reissue is to enable one to secure what he was entitled to in his original patent, but, through inadvertence or mistake, did not obtain; but it cannot be made the means of covering anything which was not in the original invention.

The novelty of a patented invention is not impeached by a prior patent which did not originally describe the invention, but has since been enlarged by reissue so as to include it.

Any device which secures substantially the same results as the patentees by the same or equivalent mechanism, is an infringement.

This is a bill in equity for an injunction, and an account of profits and damages for an alleged infringement of a patent granted by the United States to the complainant, January 11, 1867, for an "Improvement in Trunks," being a reissue of an original patent to the same substantial purport, dated October 6, 1874.

The answer denies the infringement, and also denies that complainant is the original and first inventor of the device set forth and claimed as new in his original and reisued patent.

Complainant's patent is for a removably hinged tray in the body of a trunk; the parts being so arranged and combined as to admit of the ready removal of the tray from the trunk, and yet so adjusted as to allow the tray to be turned up on its hinges, into, or against, the cover or top. This is accomplished by the peculiar form of the hinge—one leaf of which is permanently fastened to the tray, and the other so arranged as to be inserted in sockets, which are firmly fixed to the back wall of the trunk; the whole being so arranged as to admit of a ready removal of the hinged tray from the trunk, and so adjusted as to allow it an up-and-down play. * *

The Court held that any device which secures substantially the same results as complainants, by the same or equivalent mechanism, is an infringement on complainant's patent. The defendant does not use Vogler's strap hinge and socket, but in place of it he uses a hook and socket, or roller and socket—not the pintle and socket of Plumer, but a hook attached to the back wall of the trunk, and a roller fastened to the back and upper edge of the tray, so as to engage with and rest upon the hook, the two when in just a position making a hinge which performs the substantial functions of complainant's hinge, except that for lack of the elongated strap it is more readily disengaged: but when the parts are together, it operates in all essential particulars as the equivalent of complainant's strap hinge. I am, therefore, of opinion that defendant's tray is, in all its material features as a removably hinged tray, an infringement of complainant's patent. * * *

Decree for the complainant.

[*Munday and Evarts*, for complainant.
N. C. Gridley, for defendant].

NEW BOOKS AND PUBLICATIONS.

TROW'S NEW YORK CITY DIRECTORY, for the year ending May 1, 1878. Price, $5.00. New York city: The Trow City Directory Company Publishers, 11 University Place

This is the ninety-first volume of this standard publication. It contains, we are told in the preface, 248,690 names, showing an increase of 7,253 over last year, and (estimating each name to represent five persons) an advance in population of the metropolis of 37,615. The work has been carefully compiled; and large as it is, equalling in printed matter, the publishers says some thirty volumes of the ordinary novel, has been entirely prepared and published since the 1st of May. The usual excellent map of the city is provided; and in general the work is fully up to its normal standard of excellence.

THE AMERICAN MAIL.—This is the title of a new and handsomely printed monthly publication devoted to trade purposes, especially designed for foreign circulation. It exhibits the latest quotations in all the different branches of trade, shows productions of the country, its manufactures, and the advantages which the American market affords in the way of supplies for foreign places.

Recent American and Foreign Patents.

Notice to Patentees.

Inventors who are desirous of disposing of their patents would find it greatly to their advantage to have them illustrated in the SCIENTIFIC AMERICAN. We are prepared to get up first-class WOOD ENGRAVINGS of inventions of merit, and publish them in the SCIENTIFIC AMERICAN on very reasonable terms.

We shall be pleased to make estimates as to cost of engravings on receipt of photographs, sketches, or copies of patents. After publication, the cuts become the property of the person ordering them, and will be found of value for circulars and for publication in other papers.

NEW WOODWORKING AND HOUSE AND CARRIAGE BUILDING INVENTIONS.

IMPROVED MORTISING MACHINE.

Alfred D. Eddy and Henry J. Stolzenbach, Tiffin, O.—This invention is an improvement in that class of mortising machines in which the boring and cutting tool is caused to advance as the table carrying the stuff to be mortised is reciprocated in a direction at right angles thereto. The improvement relates to the device for clamping the stuff upon the table; the circular form of the work table, the adjustable bracket on which the work-table slides, the means for reciprocating the mandrel, the construction of the cam periphery, and a belt-tightening device.

IMPROVED APPARATUS FOR ATTACHING HARNESS TO THE SHAFTS.

William C. Smith, New Haven, Conn.—This is intended for the purpose of hitching quickly a single horse to any vehicle having shafts, or for hitching a double team, using two pairs of shafts, instead of a pole, the object of the device being to save time, so as to be specially adapted for hose carts, fire engines, and similar apparatus. It consists of a socket, with open top and spring-acted locking dog, applied to the harness, and of a button that enters the socket and is connected by loosely swinging link and trace piece to the shaft and trace.

IMPROVED RUNNING GEAR.

Moses Atwood, New Sharon, Iowa.—This running gear is so constructed that either of the wheels may rise above or sink below a level in passing over obstructions or depressions without straining the gearing or body.

IMPROVED SAWING MACHINE.

Flavel Simonson, Round Grove, Ill.—The operation of the machine is as follows: The guide is raised by a handle until it is engaged by a catch. A log is placed against the serrated plates and securely clamped by the dog by drawing a lever, the said lever being held in place by a ratchet bar. The guide is now released from the catch, and lowered until the saw comes into contact with the log, when, being in motion, it cuts its way through the log, being forced downward by the weight of the saw frame. When the log is cut through, the guide prevents it from dropping too low.

NEW HOUSEHOLD INVENTIONS.

IMPROVED INVALID BEDSTEAD.

Charles T. Moore, Renovo, Pa.—This is a bedstead for invalids which can be adjusted in various positions for the convenience and comfort of the occupant.

IMPROVED BURGLAR ALARM.

Hiram J. D. Miner and Daniel T. Seeley, Dunkirk, N. Y.—This is an alarm for attachment to doors and windows, which will indicate the opening of the same by releasing a spring-actuated train of gearing, which rings a bell. The movement of a lever attached to the door or window liberates an arm, and permits the gearing to act on the pallets and vibrate the hammer, which strikes a stud, causing the bell to ring.

IMPROVED WINDOW CORNICE.

Samuel Sargeant, Brooklyn, N. Y.—This consists in an improved window cornice, formed by attaching horizontal metal tubes and vertical metal tubes halved to each other, and provided with knobs in some or all of their ends, to foundation boards by screws passing through the said boards, through the inner sides of the said tubes, and into blocks of wood driven into the tubes.

NEW MISCELLANEOUS INVENTIONS.

IMPROVED ICE PLOW.

John F. Behm, Omaha, Neb.—This is an improved ice plow by which two furrows may be cut, and which may be used in either direction without turning the plow, the same marking also closer or wider, as required. The plow has cross-pieces, to which two longitudinal rows of cutters are attached, that are arranged symmetrically to a center cutter, and decreasing in height toward the end cutters. The handles are attached to a centrally pivoted beam that may be swung around to use the plow in either direction without turning the same.

IMPROVED TOY MONEY BOX.

Edward J. McLoughlin, New York city.—The shaft of a winged wheel extends through the side of the bank, and is provided with a flexible index, which touches a circular row of pins that project from the face of a dial at the front of the bank. The coin is dropped into a chute, whence it passes to the wheel, and by striking one of its wings causes it to rotate. This motion continues until arrested by the friction of the journals and the resistance of the index as it passes the pins. A number is called, and if the index stops at the number mentioned the bank pays five times the amount of the deposit, which is retained, but if the index stops at any other number than the one called, the bank retains the deposit and pays nothing.

NEW MECHANICAL AND ENGINEERING INVENTIONS.

IMPROVED GOVERNOR FOR STEAM ENGINES.

Harris Tabor, Corning, N. Y., assignor to B. W. Payne & Son, of same place.—This is an improved governor for steam engines, which acts in the customary manner when applied to an engine with single valves, and also as an automatic cut-off. When the speed increases over that required by the tension spring, weights are thrown out by centrifugal force, and the eccentric moved across the shaft, thereby reducing the travel of the valve until the engine is brought back to its former speed. If there is a tendency to decrease the speed the spring draws the eccentric in opposite direction, so as to impart a longer stroke to the valve and re-establish the required speed. The joint action of the tension spring and weighted levers on the sliding eccentric serves to keep up the uniform motion of the engine, according to the degree of speed to which the spring has been adjusted.

IMPROVED HEATING FURNACE.

Stephen W. Morgan, Winona, Minn.—This furnace saves fuel by means of reheating the smoke and passing the same again through a series of radiating pipes or drum. The invention consists, mainly, of a fire box with a system of horizontal pipes extending therefrom, and returning to a reheating box placed centrally in the fire, the gases of combustion being there reheated and conducted through a second system of heating pipes, and finally out to the chimney.

IMPROVED SAFETY VALVE.

Frank B. Scovell, Waterford, Ontario, Canada.—The steam is admitted to the space in a cylinder above a piston. The said piston being greater in area than the valve, the counter pressure exerted on it is more than sufficient to hold the valve to its seat. When the pressure of steam rises above the prescribed limit, a piston in the valve is forced upward against the pressure of a spring carrying a small sliding valve with it, so that it covers ports. The steam above the piston is thus permitted to escape when the valve is raised by pressure of steam from below, and steam escapes from the boiler until the normal pressure is regained, when the spring throws the small piston downward, moving the sliding valve, admitting steam to the space in the cylinder above the piston, when the steam so admitted will force down the piston, and cause the valve to regain its seat.

IMPROVED MACHINE FOR SANDING BRICK MOULDS.

Samuel W. Babcock, Haverstraw, N. Y.—To a shaft are attached rows of paddles, the different rows being set at a different lateral inclination. The shaft is revolved by a belt passing around a pulley attached to its end, and as it revolves the paddles take the sand from a box and project it through the slotted top of the table into the inverted moulds standing upon said table beneath the platform. A hopper having its bottom inclined from the middle to a hole on each side is connected by spouts with the apertured sand box, to enable the sand to flow automatically from the former into the latter.

IMPROVED TOOL HANDLE.

Levi H. Roberts, Morley, Mich.—The end of the handle is cut off about half an inch within the eye of the tool, and in the part of the said handle that enters the said eye is formed a transverse mortise, in which is loosely fitted a nut. In the end of the handle is bored a longitudinal hole to receive the bolt, the forward end of which is made conical. A plate, made a little larger than the eye of the tool, is rabbeted upon its inner side, to allow its middle part to enter said eye, and upon its inner side and upon the opposite sides of the hole for the bolt are formed two wedges. Slits are sawed in the end of the handle to receive the wedges. To the bolt is secured a collar. This arrangement allows the bolts to be started a little before it begins to withdraw the plate and wedges, so that should the said plate and wedges stick, they may be started by means of a chisel, or other suitable instrument.

IMPROVED MARINE ENGINE GOVERNOR.

William A. Brice, London, England.—This is an improved means of governing the speed of marine engines, to prevent what is known as "racing," when the screw is momentarily raised out of the water. The device consists in a centrifugal governor, of any suitable construction, driven by toothed gear direct from the screw shaft, and operating a throttle valve of any kind in one of two steam pipes, by which steam is supplied to the engines. Where one pipe has been used before to convey steam from the boiler to the engines, two pipes are used, and in one of them is applied a valve operated by the governor, as above described, so that immediately the screw commences to turn at a higher speed the valve will be closed, and the steam cut off through that pipe. If the sectional areas of the two pipes be equal, half the steam supply is thus cut off, the other half through the other pipe being intended to keep the engines in motion at the same speed.

NEW AGRICULTURAL INVENTIONS.

IMPROVED RECIPROCATING CHURN.

Eliza Brough, Greenville, Mich.—By suitable construction, as the churn body is oscillated upon its pivots, the milk is dashed back and forth, and is thrown into violent agitation, bringing the butter in a short time.

IMPROVED CATTLE STALL.

Ephraim E. Waddell, Gallipolis, O.—This consists in the combination, in a cow stable, of a frame, pivoted side gates, cross beam, and floor steps, the gates being pivoted in cross beam and steps, and between the front and rear ends of the stalls.

IMPROVED PLOW.

John D. Bowen, Roseburg, Oregon.—The invention consists in a share land-side and land-side share made in one piece, cut out of sheet steel struck up into proper shape, or cast of cast steel, and provided with lugs and a slot for the attachment of other parts of the plow. The whole may thus be made of less material, lighter, and cheaper, the shares being self-sharpeners.

IMPROVED MOWER.

James H. Cain, Cana, N. C.—When the cutter blades are thrown into downward position by the lever, they are rigidly braced by a rod and retained in position for work by a hook, binding on a lever, so as to be operated by the reciprocating motion of the cutter bar as imparted by the gearing of the wave wheel with the main wheel. The swinging up of the cutter blades interrupts the gear of main wheel and wave wheel by joint action of levers, and gives, in this manner, to the attendant a full control over the mower.