Business and Personal.

The Charge for Insertion under this head is One Dollar a Line. If the Notices exceed Four Lines, One Dollar and a Half per Line will be charged.

Answers to Correspondents.

SPECIAL NOTE.—This column is designed for the general interest and instruction of our readers, not for gratuitous replies to questions of a purely business or personal nature. We will publish such inquiries, however, when paid for as advertisements at 1·00 a line, under the head of "Business and Personal."

ALL reference to back numbers must be by volume and page.

ROACHES.—On page 394, current volume, query No. 3—"Is there any sure poison for roaches, that may be used without danger to children and domestic animals?" Being somewhat of an entomologist, I may be excused for stating that the *Blatta*, vulgarly called the cockroach, belongs to a genus of nocturnal orthopterous insects; these are prolific, laying masses of eggs, carefully wrapped all around. These hatch, and when the young scamps are no larger than ants, they will penetrate into boxes, chests, etc., through the smallest apertures, and enter upon their depredations. They speedily attain their full size, split on the back, and change their skin, but not their habits. Although they become winged, they seldom fly, trusting to their legs, which they use nimbly in their half adult condition. During the day they hide away in cracks or anything that will afford them shelter; so soon as darkness comes on, they sally out in swarms. About a month ago, my attention was called to my kitchen and pantry. Going in with a light, I was astonished at the numbers scampering and swarming into the corners, up to the ceiling, and on the walls, a legion of darkimps that hate the light. I thought I would accommodate the pestiferous creatures with a feast; I accordingly mixed up a quantity of freshly burned plaster of paris (gypsum, such as is used by dentists, etc., for making molds and ornaments), with wheat flour and a little sugar. This I distributed, on shallow plates and box boards, placed it in the corners of the kitchen and pantry, and left them to their glory in darkness. In the morning I found they had eaten quite freely. I fed them for three nights in succession. The plaster and flour, somehow, interferes with their intestinal canal, and gives them a costive habit, and spoils their appetite, I fancy. The short of the matter is, the roaches disappeared; whether they died outright, or left in disgust, I will not undertake to say. One thing I know, however, they are scarce and far between on my premises just now. The remedy is perfectly safe and simple. Try it.—J. S., of Pa.

CHEAP BATTERY.—There seems to be a great difference in the opinions of those that have given directions for constructing a cheap galvanic battery. I have made a great many experiments with, I guess, nearly all the forms of batteries, but I don't think that there is any cheaper, or one that will give as little trouble as Daniell's sulphate of copper battery. If the person that makes the inquiry will go to any telegraph office, he can see one and learn all he wants to know about it; and if he cannot get a porous cup, he can use a common flower crock, with the hole in the bottom stopped with melted beeswax. The connections should be made with copper wire, as any other kind is soon eaten off.—A. E. T., of Ohio.

PLATING BRITANNIA METAL.—J. F. (page 378) will succeed in plating Britannia and soft solder by first depositing a coat of copper on his soft metals, and then putting them in the cyanide solution.—D. G. P., of Ill.

REFINING GOLD.—J. E. H. can refine gold by dissolving it in aqua regia, and then pouring off the solution from the precipitate. Add to the solution a filtered solution of copperas as long as a precipitate is formed. Decant and wash thoroughly. Digest in dilute sulphuric acid, and wash again, and you have pure gold. Melt in a crucible lined with borax, under carbonate of potash.—D. G. P., of Ill.

TURNING CONE PULLEYS.—Finish on cone as desired, and then turn one pulley of the other (small) cone; take two pairs of calipers, and set them to the large pulley, on finished cone, and the small pulley (after it is turned to the desired size) on unfinished cone. Hook the jaws together, and mark their aggregate diameters on a rod with an awl or pencil. Now set one pair callipers to next smaller pulley on finished cone; hook them together as before, set the other pair to the mark, and turn the next pulley to the size of the latter.—G. L. B., of Pa.

SPEEDING PULLEYS.—Multiply the diameter of the pulley in inches by the speed that it runs, and divide by the pulley driven, and so on down. Or, if a given speed be required, multiply as above, and divide by the speed required, and the answer will be the size to give the pulley.—G. L. B., of Pa.

CISTERN.—The best answer to the question of E. E. H. is that nothing but pure water should ever be put into a cistern; and then, if properly constructed, it will remain "pure and fit to drink." If a cistern be merely an open vessel, especially of wood, and the accumulation of dirt on the roof is allowed to pass in with the water, no known substance thrown into the water will really "purify" it. This is a case where "an ounce of prevention is worth many pounds of cure."—A. B., of Mass.

CHIMNEY.—Every chimney will emit a "sooty odor," when in use, depending upon the character of the fuel: but it is aggravated if the chimney be foul. The most efficacious mode of cleaning out a flue, is to burn it out, which is always a safe operation if the chimney be properly constructed. Sweeping will help it, but is not as effective as burning, and beside costs something, while a flue can be burned out in a few minutes by putting an old newspaper or two into the bottom and applying a match.—A. B., of Mass.

PREVENTING RUST.—For the benefit of G. R., query No. 5, June 24, I would suggest a solution of carbonate of soda to prevent the rusting of polished metals. The solution can be applied with a brush, or the metal can be submerged in it. The latter is much better. As a coating for iron or tin, that will effectually resist atmospheric action, and also acids, I would recommend Pierce's "stone surfacing composition."—L. P. B., of Pa.

FIXING LEAD PENCIL MARKS.—If J. H. R. will breathe on his paper for a moment, after he has written with a lead pencil, he will find his lines will stay much longer, and be much darker.—W. E. D., of N. Y.

POWER TO DRIVE SAW.—E. A. M. will find a thin saw will run easier than a thick one. The more teeth there are in the saw, the smoother it will cut, but variations in the number will not add to nor diminish the power required.—S. H.

BLACK COPYING INK—BEST EXTANT.—Take two gallons of rain water, and put into it ¼ pound of gum arabic, ¼ pound brown sugar, ¼ pound clean copperas, ¾ pound powdered nut galls. Mix, and shake occasionally for ten days, and strain. If needed sooner, let it steep in an iron kettle until the strength is obtained.—E. G. A., of Minn.

NOISY GEARS.—I had in charge three pair of bevel gears, 30 inches diameter, running 120 revolutions per minute. The driver had wooden teeth, and at a distance of 40 feet could not be heard. I lubricated with tallow and black lead, with a little oil added, to keep it soft, twice a week, and they ran very well.—T. S., of Pa.

N. & Co.—We do not believe exhaust steam, in passing through a pipe surrounded by shavings, would be likely to ignite the shavings.

W. F. W. asks why is the bearing of a shaft or saw arbor called a journal? Because when it rotates, it is supposed to travel or go on a journey, and take notes thereof—hence journal.

B. A. J., of Wis.—If thills are pivoted to a wagon below the line of draft, the horse lifts the load to some extent, and thus does not draw quite so hard; but, as what he does not draw he carries, his work is just as hard, if not harder than it would be if the thills were pivoted higher.

J. D. N., of Ca.—A person acquainted with arithmetic can, if ordinarily intelligent, and willing to apply himself closely to study, make very fair progress in algebra without an instructor.

R. H., of Vt.—Like all other perpetual motion devices we have seen, yours has the trifling difficulty that it cannot be got to work on its own account. The reason is given in another column, in an article entitled "Mechanical Power and Specific Work."

B. G. C., of Ala.—The unpleasant odor of gas stoves, arises from the permeability of the tubing, and partly from the products of combustion. The latter does not render the food cooked unwholesome, but the air is rendered more or less unfit for breathing, and of course deleterious to health, unless good ventilation is secured.

J. G., of ——. will find directions for building a cheap ice house on page 359, Vol. XXIII, of the SCIENTIFIC AMERICAN.

W. J. B., of Dakota.—The principal objection to the Belgian system of wire cable towing is the difficulty in dealing with the slack, and keeping the cable in the center of the canal in rounding curves.

T. H., of Mo.—If, as you say, you have been a reader of the SCIENTIFIC AMERICAN for six years, you ought to have learned from it by this time that there is no such substance as you inquire for. The old "sailor man" who tells you he can discover gold or silver, by attraction of divining rods or magnets, is either self-deluded or is trying to delude you.

G. V., of Conn.—Have received a large number of letters on the canal question, for publication, where the parties desired to put their inventions against a modest amount of capital. We have not room for yours.

A., of N. Y.—The information you seek will be partly found in Box's "Treatise on Heat." To find complete data, you will need to search through many different works relating to heat.

W. B. W., of N. Y.—The U. S. gold coins are alloyed with copper.

J. E. W., of N. Y.—Brass scraps are remelted and used. They sell readily as old brass. Leather scraps are also utilized by a process you will find in another column.

NEW BOOKS AND PUBLICATIONS.

HERMES MERCURIUS TRISMEGISTUS; his Divine Pymander Also, The Asiatic Mystery, The Smaragdine Table, and the Song of Brahm. Edited by Paschal Beverly Randolph. 8vo, pp. 144. Boston: Rosicrucian Publishing Company. 1871.

We are told in the preface of this book that "the Divine Pymander, or Poemander, as it is now more commonly rendered, meaning 'shepherd of men,' comes from Egypt. It is not a child's book, nor a sectarian work, but it is a divine revelation." Further on it says: "In this book, though so very old, is contained more true knowledge of God and Nature than in all the books in the world, I except only Sacred Writ." The Rosicrucians who publish the book, say of themselves: "We claim to stand in the door of the dawn, within the cryptic portals of the luminous worlds, and that the lamp that lights us is Love Supreme! Unlike others, we do not recognize God as the Light—for this can be seen and known—but as the *Unfathomable Shadow*, the unsearchable *Center*, the impenetrable *Mystery*, the unimaginable *Majeste—utterly* past discovery—and who, as we approach, ever recedes, luring us through illimitable ages and epochs, up the steep mountain of *Achievement*—the whole end of man's being—in which opinion we of course differ from all philosophies in Christendom." Then, to show what they mean by "achievement," they express the following very high opinion of three well known modern characters—"Men, for instance, like James G. Bennett, James Fisk, Jr., and B. F. Butler, beyond all cavil the three ablest men on this continent, in their respective spheres, and whose superiors in absolute individuality of character cannot, today, be found on earth; born *kings of will*, and intensity of purpose"—in fact, we suppose they represent the *trismegistus*, or thrice great Hermes of modern times. We have not room for more extracts, and can only say that philologists have pretty much come to the conclusion that no such person as Hermes ever existed, and that the twenty thousand books attributed to him are quite as apochryphal as the author himself. The presumption also is that the Rosicrucians never had more actual existence than the Pickwick Club.

GOOD SELECTIONS.

A paper covered 12mo, 165 pages. Containing selections in prose and poetry from our best authors. A capital book for students and lecturers. J. W. Schermerhorn & Co., publishers, 14 Bond street, New York.

Recent American and Foreign Patents.

Under this heading we shall publish weekly notes of some of the more prominent home and foreign patents.

OFFICE INDICATOR.—Lewis Burger, of Chicago, assignor of three fourths his right to W. S. Gobble, of Scottsville, Ill.—A novel combination of parts whereby the necessary routine information will be given to parties inspecting it when the office is closed or open, has a tablet for orders, a small receptacle for business cards, a letter box, a clock dial, whose hands can be set to indicate the hour at which the office is opened or closed, disks which display through appropriate apertures the day of week, month, and name of month respectively, etc.

MILKMEN'S SIGNALS.—Elisha Belcher Blake, of Tarrytown, N. Y.—This invention has for its object to furnish an improved house or receptacle for the pitcher or other vessel in which the milk is received from the milkman, to protect said vessel from dust, dogs, cats, rain, etc., and obviate the necessity of watching for the milkman, and which shall be so constructed as to sound an alarm when the door is opened. If no other benefit should be derived from this invention than the suppression of the unearthly screech with which milkmen in New York and Brooklyn announce their arrival, the inventor must be hailed as a public benefactor.

APPARATUS FOR STEAMING AND FILTERING.—John Murdock, of South Carver, Mass.—The object of this invention is to provide convenient and simple means for performing various operations in and around the household, and it consists in a receptacle elevated on legs, with a funnel shaped bottom and flanged top, whereby it is adapted for steaming substances smoking meat, filtering water, etc. Upon this receptacle is placed a cask in steaming food for cattle or in smoking meats. Filtering material is placed in the funnel in cleansing water. One or more casks or vessels may be fitted to the stand, as seen in the drawing, and used as occasion may require. In filtering or leaching, the purified liquid or lye is discharged through a pipe at the bottom. Steam may be introduced through a pipe for cooking vegetables for feeding animals. A small stove may be connected with the funnel, in which sawdust or other combustible material may be slowly burned for smoking meat in a cask. All the operations referred to have to be performed on the farm, and great inconvenience has been experienced for the want of a suitable stand on which to support barrels or vessels for these purposes. By this stand the barrel is suitably elevated and supported and the processes named may be performed in a convenient manner.

EYE BALSAM.—William Klingbell, of Champaign City, Ill., has invented an eye balsam, composed of various substances found in the U. S. Dispensatory, which, applied externally, in such proportions and at such intervals as will appear most adapted to the nature of each case, will, he claims, cure diseases and defects of the eye, especially those leading to or arising from short-sightedness.

GRATE BAR.—William Muir, Archibald, and Pierce Butler, Carbondale' Pa.—These grate bars have a broad base and narrow top, with concave sides and oval top, and a deep longitudinal groove in the bottom; they also have numerous transverse openings from the bottom up through the sides and part of the top, calculated to extend upwards considerably in the fuel to admit the air freely to fine fuel, such as culm, sawdust, spent tan bark, and the like.

WATER FILTER.—William Linton, Baltimore, Md.—This invention relates to a filter so constructed that a large central chamber is provided for the reception of asbestos, which constitutes the filtering material used, and in which a smaller chamber is formed at each end of the cylinder or case, the same being divided by a scroll or spiral partition, so that the water takes a spiral course on entering and leaving the filter. Suitable nozzles are also provided for reversing the current of water and thus cleansing the filter.

SOLDERING FURNACE.—Andrew J. Burke, Baltimore, Md.—This invention consists in an apparatus whereby the soldering of the parts of a can together is effected, without the use of the hot iron, by causing the cans to gradually advance along a heated plate till the solder becomes melted, and then shoving the cans aside upon a cooler plate, where they remain till the solder cools, and the parts are thereby joined together.

TENONING MACHINE.—This is a machine for trimming tenons of wood, whereby, it is claimed, much time is saved and the work is more accurately performed than it has hitherto been. It consists in a knife and adjustable guides in combination with a properly constructed frame. The machine is adapted to various kinds of tenons, but is especially useful in trimming spoke tenons. An adjustable guide supports the small end of the spoke while the sides of the tenon at the other end are being trimmed. In trimming the sides of the tenon the main guide is adjusted so as to give the tenons the desired thickness. In being trimmed, the spoke is held firmly in the required position by two guides, one of which slides out and in or to and from the bed, and is varied as to hight by means of an incline. For trimming the edges of the spoke tenon, a flap or apron is adjusted or inclined to correspond with the disk of the wheel, and the knife will cut the edge of the tenon so that it will fit the mortise in the hub and give the proper or desired dish to the wheel. The machine may be used in making wooden wedges, the flap in this case being adjusted to give the wedge the desired angle. Andrew C. McQuaid, of Wenona, Ill., is the inventor.

SEATS FOR STORES.—Socket plates are affixed to the under side of the counter, in which brackets are fitted, which support the seats in such a way that both brackets and seats may be turned under the counter when not in use. Daniel Christian, of Chagrin Falls, Ohio.

PROPELLING BOATS BY OARS.—The oar is made in two parts, and the other portions of the device are so constructed that the rower may sit with his face in the direction the boat is advancing, and at the same time feather his oars. The invention of Thomas G. Pringle, of New York city.

COAL SCUTTLE.—The invention of Edgar Eltinge, of Kingston, N. Y., has for its object the improvement of a shield or cover patented by him in 1866. It consists in a construction and combination of parts, designed to make the shield cheaper and more convenient.

ATTACHMENT FOR VACUUM CUPS.—This invention supplies an electro-magnetic or galvanic attachment for Dr. Hadley's vacuum cups and receivers, patented in 1867, by the use of which an electric, galvanic, or magnetic action is exerted upon the selected nerves, and conveyed to any part of the nervous system, at the same time that an influence is exerted upon the arteries, veins and lymphatics, when a vacuum is produced in said cups or receivers. William Amer, of Janesville, Wis., is the inventor.

SILK SWIFTS.—John N. Stearns, of New York city.—The heads of the swift are made of sheet metal, of circular or other suitable form. The central axle is made also of sheet metal, tubular, and soldered to the centers of the heads. The projecting gudgeons, by which the swift is hung in the supporting frame, are rivets driven through the plates, so that their heads abut against the inner faces of said plates. They are retained in place by solder, and the central tubular axle is applied after the rivets have been secured, and covers their heads. The silk holders or rounds are of wire, and their ends are fitted through apertures in the end plates, and soldered to outer faces; or they may be laid over the edges of the plates and then soldered to their outer faces. It is claimed that by making a metallic swift in the manner specified, lightness, durability and cheapness are secured.

WRENCHES AND PIPE TONGS.—James A. Morrison, of Brady's Bend, Pa., has invented a combined pipe tongs and wrench. The device consists of two handles, curved on one side of their pivot, and two curved serrated jaws pivoted thereto, in such a manner as to adapt them to hold tubes, etc., whether true cylinders or not. The rear parts or handles of the levers or arms are made straight, and their forward parts are curved, so as to point toward each other, and upon them are formed tenons, which enter recesses in the convex sides or backs of the curved jaws, to which they are detachably pivoted by short bolts and nuts, so that the said jaws may adjust themselves to objects of different sizes and shapes.

IMPROVEMENT IN CONSTRUCTION OF CARS.—The car is made mainly in tubular form and of sheet metal, except a supporting frame or platform. The latter is composed of two long parallel beams tied together by cross-bars, and the body consists of an outer shell of sheet metal plates bent over T ribs, and an inner shelf, similarly fitted to the inner sides of the said ribs. The ribs rest at the ends on the timbers, and are firmly attached to them, and spring over from one to the other in a true circle. The ribs are arranged as far apart as the width of the sheets which are joined thereto and secured by riveting or by any other means. A level floor stretches from side to side above the beams and rests thereon, and a curved plate is suspended between the beams below the floor to form an air passage for admitting air from the ends along under the floor, to rise up into the car through holes therein, and between the outer and inner shell. The inner shell is perforated for allowing air to enter between the two walls, above the contents, and to pass down and into the contents, when of grain or other like substance, through the perforations below the grain; or air may enter the spaces from below the bottom, the latter being supported above the beams and passages provided between it and the beams.—John E. Leeper, of Godfrey, Ill., is the inventor.

PLOW ATTACHMENT.—John T. Hovis, Clintonville, Pa.—This invention relates to the combination with a plow of a vertically reciprocating cutter bar, similar to those used in mowing machines, the office of which is to sever such lodged and prostrate grass stalks, stubble, etc., as may be in the line of the furrow, thus preventing the plow from clogging with such vegetable matter, and also enabling it to turn the same under, so that it may rot, and thereby fertilize the soil.

MAGAZINE FIREARMS.—John L. Kirk, of Mattoon, Ill.—This invention consists in the arrangement of certain devices to form one of the now numerous class of firearms which carry a magazine of ammunition in a cylinder, composed of a cluster of barrels or tubes, soldered or otherwise fastened together. The construction gives a very compact and apparently effective arm.

GRAIN CLEANER.—John H. Weaver, of Gap, Pa.—This is a new combination of familiar devices in a fanning mill, or grain cleaner, whereby the inventor claims increased efficiency in separating wheat and other grains from chaff and other foreign bodies, such as straw, sticks, seeds, etc.

ELECTRO-MAGNETIC MEDICAL APPARATUS.—This invention relates to several improvements in the arrangement of electric apparatus used for generating electrical currents, which are to be applied to invalid and sick persons, for healing diseases. It consists in an improved arrangement of the battery, binding terminals, and adjustable magnets, and in a novel general combination of parts, whereby a compact, safe, and portable apparatus is produced. Albert J. Steele, of Brooklyn, N. Y., is the inventor.

HARNESS BUCKLE.—Thomas Crakes, of Mishawaka, Ind.—This invention has for its object improvement in buckles, or fastenings, for various parts of harness for horses, etc., but more especially designed for coupling the hames. The end parts of the buckle are made with hooks, or eyes, upon the outer ends, to hook into eyes, or rings, attached to the straps or hames to be connected. The other parts of the buckle are constructed to give a convenient and secure fastening.

REVOLVING FIREARMS.—John L. Moss and Edward W. Johnson, of Columbus, Miss.—This invention has for its object to facilitate the loading and shell extracting process in revolving rifles and pistols; and consists, principally, in the use of a rotary breech plate, which is hung upon the base pin, so that it will revolve, but not slide thereon, while the cylinder can freely slide, being connected with the barrel by keys. The breech plate has grooved supports for the cartridge head, and will retain the shells when the cylinder is carried forward, extracting them from the latter.

HARVESTER DROPPER.—John N. Wallis and Theodore Wallis (assignors of one third of their right to Henry G. Wise), of Fleming, N. Y.—This invention has for its object to furnish an improved attachment for harvesters, which shall be so constructed as to drop the grain in compact gavels at the rear of the body of the machine, entirely out of the way of the machine on its next round, and which is at the same time simple in construction and convenient in operation. The dropper consists in a series of parallel bars, or slats, attached at their forward ends to a shaft, the journals of which work in bearings in the framework. The framework is extended back, with an inclination toward the rear of the body of the machine, and to its pivoted rollers, around which passes an endless apron. The endless apron is driven from the mechanism of the reaper, and is designed to receive the gavels from the dropper, transfer them to the rear of the body of the machine, and drop them. The grain is transferred from the dropper to the endless apron by a beater, which consists of a series of slightly curved fingers, attached to a shaft, the journals of which work in bearings in the frame work. The fingers of the beater pass up between the slats of the dropper, lift the grain from said dropper, and transfer it to the endless apron. The throw or movement of the beater may be regulated as desired. A foot lever, operated by the driver, serves to throw the apparatus into or out of gear. The harvester should be provided with a stop, to prevent the cut grain from falling upon the dropper while the grain upon said dropper is being transferred to the endless apron.

WATER WHEEL.—This invention has for its object to furnish an improved water wheel, which shall be so constructed as to overcome the lateral and centrifugal pressure that is wasted upon the rims and scrolls of most wheels, and thus produces no useful effect. Upon the interior surface of the outer sides of the buckets are formed curved flutes, shoulders, or offsets, the effect of which is to give the water a spiral direction, and distribute it equally over the discharge or reaction buckets, thus preventing the wheel from clogging, and relieving the scroll from the centrifugal and lateral pressure. George W. Leonard, of Middle Valley, Pa., is the inventor.

SIDE-HILL PLOW.—George W. Leonard, of Middle Valley, Pa., has invented a swivel, or side-hill plow, so constructed as to raise the top of the working mold board to prevent it from clogging, and to enable it to turn a better furrow. It consists in the combination, with the double mold board, of an adjustable plate. Each edge of the forward part of the double mold board serves alternately as a share and as a cutter, as the double mold board may be turned to turn the furrow to the right hand and to the left hand side of the plow. The division line between the two mold boards of a swivel or side-hill plow must necessarily be low, so that it does not properly turn the furrow sluice, and is liable to choke and clog. To remedy this, the inventor pivots a plate to the upper part of the double mold board. The lower part of the plate is so formed that when turned to either side it locks fast, and forms a continuation upward of the mold board of the other side, causing the plow to work much more effectively, turning a better furrow.

EXTENSION SHANK FOR BORING BITS.—William S. Pattin, of Portsmouth Ohio, has invented an improved means for locking a bit holder and bit, so that the latter will have no side play, but will tend to move constantly, without deviation, and in a perpendicular line, through the timber. If it be perceived to bind or work with unusual friction, a turn on a nut forces a sleeve upon the converging shank of the bit, and centers the latter in perfect alignment with the stock. An extension shank is fastened in the bit in the same way as ordinary bits. The end of the shank is provided with a fastening dog for securing the bit. The sleeve is square inside, and from the screw thread the extension shank is square to the end to fit the sleeve. When the sleeve is allowed to slide back on the extension shank, the fastening dog, being pivoted loosely to the shank, falls back, and allows the end of the bit to enter. When the sleeve is forced up by the nut, the dog is inclosed by the sleeve, and a hook enters the notch in the end of the bit shank, while the end of the sleeve incloses the shank of the bit and firmly holds it in place.

FURNACE FOR MELTING ORES AND METALS.—This invention relates to a new and important improvement in the process of melting iron in cupolas, or melting po s, which, it is claimed, has demonstrated its utility in actual use. It consists in allowing one or more currents of air to enter the cupola or pot above the tweers, during the process of melting, thus supplying an additional quantity of oxygen to the carbon in the cupola, thereby converting the carbonic oxide evolved into carbonic acid, greatly increasing the temperature in the furnace by producing a more perfect combustion, and consequently more perfectly liquefying the iron. One or more pipes are introduced into the cupola, at any point above the tweers, and either above or below the feed door. Each has a funnel attached to it, the lower end of which extends to near the floor, or as low as may be found desirable. The upward rush of the gases in the cupola, produced by the blast below, causes a strong draft of air through the pipe into the cupola, producing the results before stated. By this simple device it is claimed that the iron is rendered more fluid, its quality is improved, and certain castings, which have hitherto baffled the most skillful foundery men, are produced with the utmost ease, sound and perfect in all respects. W. S. Wood, of Newtown, N.Y., is the inventor.

SASH LOCK.—This is the invention of Robert R. Ball, of West Meriden, Conn. It is a simple, and at the same time effective, sash holder and lock.

WATER GATE.—William C. Hopwood, Fillmore, Ind.—This invention consists in the combination of a gate for water-course fences, with an iron rod stretched across the stream, either in one piece, or in as many different sections as may be necessary, said rod being properly fastened at its ends to the banks of the stream, and, at as many intermediate points as may be expedient, to posts or stones in the bed of the stream. The gate aforesaid is also combined with braces, which, when the water is low, rest on the bottom of the stream and keep the gate upright.

APPLICATIONS FOR EXTENSION OF PATENTS.

PUMP.—J. D. West, East Orange, N. J., has petitioned for an extension of the above patent. Day of hearing, September 13, 1871.

HORSE POWER.—George E. Burt, of Harvard, and Abram Wright and Geo. F. Wright, of Clinton, Mass., have petitioned for an extension of the above patent. Day of hearing, September 6, 1871.

ROCK CUTTING AND DRILLING MACHINE.—William Plumer, Boston, Mass., has petitioned for an extension of the above patent. Day of hearing, September 20, 1871.

HAND STAMP.—T. J. W. Robertson, Washington, D.C., has petitioned for an extension of the above patent. Day of hearing, September 6, 1871.

Value of Extended Patents.

Did patentees realize the fact that their inventions are likely to be more productive of profit during the seven years of extension than the first full term for which their patents were granted, we think more would avail themselves of the extension privilege. Patents granted prior to 1861 may be extended for seven years, for the benefit of the inventor, or of his heirs in case of the decease of the former, by due application to the Patent Office, ninety days before the termination of the patent. The extended time inures to the benefit of the inventor, the assignees under the first term having no rights under the extension, except by special agreement. The Government fee for an extension is $100, and it is necessary that good professional service be obtained to conduct the business before the Patent Office. Full information as to extensions may be had by addressing

MUNN & CO., 37 Park Row.

Official List of Patents.

ISSUED BY THE U. S. PATENT OFFICE.

FOR THE WEEK ENDING JUNE 27, 1871.

Reported Officially for the Scientific American.

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