

Scientific American.

NEW YORK, MARCH 24, 1855.

Who is the Inventor of Combined Stame and Steam in Engines.

Paul R. Hodge, Engineer, in a communication to the London *Mining Journal* of February 10th, claims to be the first inventor of combined stame and steam in engines, for which the Messrs. Wethered, of Baltimore, have obtained a patent—illustrated on page 45, this volume SCIENTIFIC AMERICAN. He asserts that he obtained a patent in England for this combination, three years before the patent was issued to Messrs. Wethered. He constructed such an engine for the Great Exhibition in 1851, which is now in operation at Leicester. A patent it seems has recently been taken out in England, on the basis of Messrs. Wethered being the original inventors; but Paul R. Hodge denies that any person has power to use it, or grant licences but himself. His plan, he says, is to take steam from a drum on the boiler, through a pipe, bringing it down and around the furnace four times, and carrying it through one of the tubes of the boiler, from thence into a wrought iron jacket around the cylinder, and then into the steam chest, where it is mixed with ordinary steam, conveyed by another pipe from the boiler down in front of the fire box.

It appears to us that Mr. Paul Rapsey Hodge claims more than he is entitled to, in his letter to the *Mining Journal*. Whatever may be the merits or demerits of using combined stame and steam, or the credit which the inventor of its use should receive, is not the question with us at present, but, "who was the original inventor?" We believe it was not Paul R. Hodge. He obtained a patent in England on the 3rd of July, 1850, the one which he claims embraces the principle covered in the American and foreign patents of Messrs. Wethered, but we cannot, by reading a copy of that patent of Mr. Hodge, get a clear idea that the use of common and surcharged steam (stame) combined, formed any part of his improvements. His object appears to be the use of surcharged steam in a jacket, as he states in his letter; the common steam which he states to have mixed with the surcharged steam, was not common, but surcharged steam also, for, instead of conducting it directly from the boiler to the cylinder, to mix it with the stame, the steam pipe made several circumvolutions in the smoke box, for the purpose, as stated in the published abstract of his patent, "to be further charged with heat (in plain language, made into stame) before entering the cylinder." We consider that Mr. Paul R. Hodge is not entitled to any credit for his method of using steam; he merely adopted a modification of Mr. Frost's plan, in the use of stame, which was published in the SCIENTIFIC AMERICAN as long ago as 1849.

British Patent Office—Formalism.

"After having paid £60 sterling to secure my patent for explosive appliances. The Lord High Chancellor of England refuses to sign it, on the grounds that it was one day too late. This delay of one day was caused by the final specification being detained in Dublin, on Sunday, the 2nd of April, no mail leaving Dublin on that day for Cork. The letter of Mr. William Johnson, my patent agent, was dated the 31st March, and the Glasgow post-mark was the same date; I therefore received his letter only on the 3rd April. All this was set forth in my petition, yet the Chancellor refused to sign the patent. I ask, could such a thing as this be enacted in America? J. NORTON."

[The above is a clause in a letter to us from Capt. Norton, an old Peninsular officer, who has devoted a great part of his life, with much success, to improvements in fire arms and various kinds of explosive appliances. It shows how much thick-skulled nonsense there is in the British system, from beginning to end. Such an evil could not be enacted in America, or if committed, relief would soon come in some way, when the public was made to understand the justice of the applicant's

demands. Capt. Norton made a number of very useful inventions in shot and shells, and recommended them to the attention of the head men in the British army more than ten years ago, but they were passed over unheeded, and now when danger threatens them in the Crimea, they are beginning to rub their eyes and inquire about their utility. In 1826 he gave one of his rifle percussion shells for cannons to Col. R. Egerton to show Lord Fitzroy Somerset (now Lord Raglan,) when that personage replied, "All inventions in the improvement of arms tend to place the weak on a level with the strong; we are the strong, and therefore do not encourage improvements."

No better evidence could be afforded of the incapacity of Lord Raglan, to conduct the war in the Crimea, than the above piece of mud-headed enterprise. He has found out by this time who are the strong. The man who despises inventions and improvements is sure to run himself out very quickly in the present age: Lord Raglan himself is an evidence of this. He was a despoiser of improvements, thus showing that he had no mental grasp, nor the quality of mind to plan, or else he would always have been a friend to inventors and an advocate of improvements. The consequence is, England has lost a fine army, and Lord Raglan, who at one time (untried) possessed quite a respectable military reputation, has not a rag of it left,—he has stripped himself of every stitch of military character.

The Gulf Stream.

It is believed by many that the waters of the Gulf Stream are nothing more or less than the waters of the river Amazon. This great father of waters is bedded more than 1,000 miles immediately under the equator, and all its tributary streams, for many thousand miles, are constantly pouring their hot water into this mighty reservoir of water. As these waters are gathered under the burning sun of the equator, they are extremely warm; far more so than the waters of the Atlantic under the equator. The great body of heated water shoots out into the Atlantic more than a hundred miles, in the face of the eternal trade winds.

The Amazon is sixty miles wide; after being bedded in its irresistible course, it curves off to the left, and scuds off before the strong trade winds till out of their reach. Driven along with great force, it takes its course round the great bay formed between the two continents of North and South America.—Dashing along the northern coast of South America, and passing to the leeward of the West India Islands, it leaves the shore of Cuba and proceeds along the shores of Florida, the capes of Virginia, and the south coast of North America, and passing along the shores of Newfoundland, ends its mission among the icebergs which float out of the northern ocean. Cut off the Gulf Stream, and it would not be many years before the North Atlantic would be filled with icebergs, and the port of New York would cease to be the center of American commerce. Before the course of the Gulf Stream was known, ships from Europe to New York, in winter, used to sail first to Charleston, S. C., then coast it down to the Hudson. The voyage used to occupy them from six to eight months. The Nantucket fishermen were the first to discover the course of the Gulf Stream, and while English captains were taking six months to reach New York, they used to make the run sometimes in one month. Vessels running north of this stream in winter get their sails and rigging frozen so that it is scarcely possible to make any headway. By running into the Stream they thaw out, for the water is always warm, and is known by this, and its intense deep blue color. It is provided as a reservoir of heat by the Great Governor of Worlds, to accomplish his grand purposes. It is the influence of this Stream which renders the climate of Britain so genial. Were it diverted to break upon the coasts of Spain only, the Island of Britain would soon become a bleak, cold, and inhospitable region, with a climate as cold and a winter as long as Labrador; and Erin would cease to be named the Emerald Isle,

for her fields would be covered with snow during eight months in the year, instead of green herbage. It appears from geological evidences, that the Gulf Stream, at one period, did not break upon the shores of Britain, and it was then as cold as Iceland. Upon such harmonies of nature's operations, directed by an All-Wise Creator, do men and nations depend.

Improved Weighing Scales.

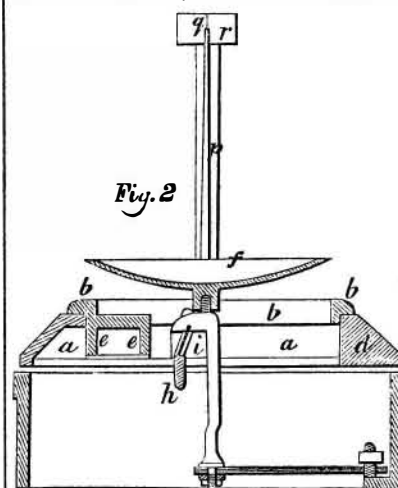


The annexed figures represent an improvement in weighing scales, for which a patent was granted to John L. McPherson, of New Vienna, Clinton Co., Ohio, on the 16th of January last.

Figure 1 is a perspective, and figure 2 is a central vertical section view perpendicular to the axis of suspension. Similar letters refer to like parts.

The invention consists in constructing the scale of two concentric circular rims, the exterior supported by knife edges, and the inner rim movable. The dish resting on a bar running across the outer rim on one side of its axis, of suspension, the balance being produced when weighing, by so moving the inner rim that a weight attached to it shall approach a weight fastened to the outer rim on the opposite side of the axis of suspension, a pointer attached to the movable rim indicating on a graduated arc of the outer rim the weight upon the disk.

In the figures a and b are the rims, supported on the knife edges, c, and so loaded by weights, d and e, as to be accurately balanced when the weights are on opposite sides of the axis of suspension. The dish, f, is supported on a knife edge, i, of a bar, h, running across the outer rim, a, on the side of the axis of suspension nearest the weight, e. Any substance placed upon the dish will, it is evident, add to the weight on that side of the axis of suspension, and for the restoration of the equilibrium, render it necessary to move the weight, e, towards the weight d. To do this the rim, b, is moved within the



rim, u, by means of the knob, l, until the pointer, p, rests on the mark, g, of the indicator, r; the scale will then be again balanced on the knife edges, c, and the weight of the article in the dish indicated by the division of the graduated arc, m, upon which the pointer, u, rests. Should the scale rest on a surface having a slight inclination, the indicator, r, can be so adjusted that the point-

er, p, will rest on the mark, g, when the empty scale is balanced, by loosening the screw, t, and moving the indicator laterally.

More information respecting this beautiful improvement may be obtained by letter addressed to the patentee at New Vienna.

Niagara Suspension Bridge.

The new suspension bridge over the Niagara river, erected by John E. Roebling, C. E., of New Jersey, is at length completed and opened for trains. It is of great strength, and forms the connecting link between the Great Western Railroad in Canada, and the Central New York Railroad. The first locomotive passed over on the 8th instant; it weighed 23 tons. The depression at the center was 3½ inches, but no vibration was produced. "On the 9th the experiments were repeated with two other engines, making trips at the rate of 8 miles per hour. One locomotive, weighing 34 tons, with a car full of passengers, passed over at the same speed; the depression at the center was 5½ inches." The strongest gales of wind have no effect upon it. The length of span from center to center, is 822 feet; height of towers above the rock on the American side, 88 feet; height on the Canada side, 78 feet; height of floor of railway, 60 feet; number of wire cables, 4; diameter of lash cable, 10 inches; number of No. 9 wire in each cable, 3,659; aggregate strength of cables, 12,400 tons; weight of superstructure, 750 tons; weight of superstructure and maximum loads, 1,250 tons; maximum weight of cable and stay will support 7,300 tons.

The Olive in California.

We perceive in the *Pacific*, of San Francisco, that at a meeting of the California Academy of Natural Sciences, held February the 5th, Dr. Kellogg exhibited a drawing and specimen of the olive. The specimens were brought by Col. D. Ransom, of the U. S. Survey, from San Fernando. It is well acclimated in California at all the old mission stations. This tree, as stated by Dr. Kellogg, is thrifty on the sea coast, declivities, and valleys, where the soil is free from stagnant moisture, and when the debris is flat gravel. It grows to the height of 20 feet, with a trunk of eight or ten inches diameter, and forms a picturesque ornament to avenues and plantations. Its branches are graceful; its foliage ever-green; its wood excellent; it lives to a great age, and can be propagated by cuttings.

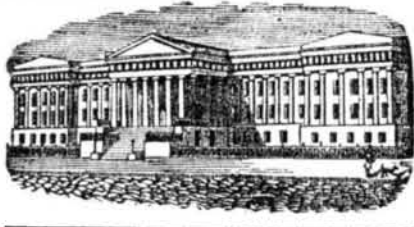
We hope the people of California will enter into the cultivation of this tree with zeal. Its oil is the finest in the world. It cannot be obtained pure from abroad; all that is sold here is adulterated. We hope California will soon be able to furnish a supply.

To our Book Publishers.

Our publishers of foreign books commit a grave error in not giving the dates of foreign publications. It often happens that these works are referred to as authority, and the date then becomes as essential as the matter. When a work published in London is republished here five or six years afterwards, with only the date of its American publication, it cannot be used nor referred to as authority in a question of dates. We have had considerable experience in this line, and we must tell our publishers that it is not to their advantage to print an old book with a new date, to make it appear a perfectly new publication.

Weather in England.

The severity of winter was felt in England during the first week of February, the same period of its greatest severity in this country. The various parks presented more the appearance of as many Fairs in honor of some great national event, than the usually quiet promenades. The ice was literally covered with human beings, sliding and skating. The Thames, above Richmond, was completely frozen over, and no craft, even of the smallest description, could either pass up or down. Nearly all the steam vessels plying above London Bridge were compelled to be laid up.



[Reported Officially for the Scientific American.]

LIST OF PATENT CLAIMS
Issued from the United States Patent Office.
FOR THE WEEK ENDING MARCH 14, 1855.

SASH FASTENER—Wm. C. Arnold, of Rochester, N. Y.: I claim the arrangement of the bolt, B, traversing in guides, the slide, S, and the tumbler, T, in relation to the case and the notches, h, thereon, as set forth.

BOTTLE STOPPER FASTENINGS—T. A. Ashburner, of Philadelphia, Pa.: I am aware that many devices have been essayed for securing corks in bottles, but all of them involve expense, intricacy, or difficulties in placing or removing them from the bottle, and I do not claim any such contrivances, meaning to limit myself to what I have described and represented, relying mainly upon the hinging of the stirrups to the button, which greatly facilitates the placing or removing of the button from the cork, and securing the stirrups on one side to the neck of the bottle.

I claim the stirrups described for securing corks in bottles, viz., a button provided with hinged stirrups for catching under the projection of the bottle, for the purpose of more readily placing it on, or removing it from the cork, and this I claim, whether said device is a fixture on the bottle, or separate therefrom, as described.

POLISHING APPARATUS FOR WATCHMAKERS' LATHES—J. M. Botum, of New York City: I claim the application of the polishing spindle to the lathe in such a manner that it has a universal movement, substantially as described, for the purpose of adjusting the polishing wheel to surfaces of various forms.

[A brief description of this invention may be found on another page.]

MACHINES FOR TURNING, BORING, AND SLOTTING METALS—Alanson Brown, of Rochester, N. Y.: I am aware that single column machines for boring and drilling small work, have been used, in which operative parts project forward of said column, this I do not claim, as the support is not firm enough for accurate work of the kind which my machine is devised for, and these I do not claim.

But I claim so arranging the table or face plate, and upper spindle or tool holder, on a machine for turning, boring, and cutting gear seats, as that either one of the two may be revolved, and the other remain stationary, as the character of the work may require, and substantially in the manner set forth.

I also claim combining with the upper spindle, a revolving slide head carrying a cutter susceptible of either a horizontal or vertical motion, or adjustment, as set forth, for the purpose of turning off work either inside or outside, that will not revolve between the columns.

I also claim arranging two, three, or more supporting columns, in rear of a plane drawn through the line of center of the operative parts of the machine, for the purpose of leaving an unobstructed front for the introduction of the piece to be dressed, as described.

SELF-LOADING CARTS—Ze Butt, of Lincolnton, N. C.: I claim the manner described, or any other essentially the same, of constructing, arranging, combining, and operating cart bodies, so that they can be dropped to or upon the ground to receive the load, be loaded, as the cart moves forward, and then elevated and dumped or unloaded, the same as an ordinary cart, substantially as and for the purpose described.

[See a description of this self-loading cart on another page.]

EXCLUDING DIRT FROM GROOVED RAILROAD RAILS—C. M. Eakin, of West Philadelphia, Pa.: I claim the application of an elastic filling to the groove, which is formed in the track to receive the flanges of the wheels, substantially as and for the purposes set forth.

[A descriptive notice of this invention will be published in the next number of the Sci. Am.]

HOOP JACKS FOR SAILING VESSELS—Elmer Foster, of Fairton, N. J.: I claim the arrangement of the hoop jack with the lower halyard block, the brace line, clevis, and gaff hook, clevis and hoop line extending down to the foot of the mast and connected to each sail loop, as set forth.

CUT-OFF VALVES FOR STEAM ENGINES—Noble T. Greene, of Bridgeport, Conn.: I claim combining with the rocking levers, or their equivalents, for operating the valves, the spring tappets on the sliding bars, substantially as described and for the purpose specified.

I also claim the combination with the sliding spring tappets, that operate the rock levers, substantially as described, the employment of the gauge bar, or any equivalent therefor, to regulate the period of closing the valve, whether the said gauge bar be regulated by a governor, or by other means, as set forth.

SEED PLANTERS—H. Ludington & S. R. Lupton, of Addison, Pa.: We claim the construction of an expanding sectional hopper, E, E, hung by hinges or otherwise pendant, and formed with concaves on the inner sides, which concaves have formed thereon diagonally arranged ridges or sloping irregularities, a a a a, substantially as described.

Second, we claim the construction of a drum, cylinder, or roller, F, F, with series of ridges or sloping irregularities, p p p, formed or arranged diagonally across its circumference or periphery, together with longitudinal troughs or gutters, s s s, at intervals between the ridges as shown. This cylinder being also combined in action or operation with the hopper, E, E, and the revolving spike shaft, H, as set forth.

Third, we are aware that there are such devices as tilting tables, dumping beds, and cart bodies, and sloping or sliding planes, for the purpose of precipitation, none of these, however, do we claim, as they are not equivalent forms of construction to ours, for they do not embrace the two fold principles of our device; nor is it a fixed sieve, or permanently arranged grating that we claim, but instead, we claim constructing a feeding or supply fountain, having the combination of adjustable hinged frame grating, actuated by cords or equivalents, and to answer the two fold purpose of holding the compost mass, and preventing the escape of lumps, &c., and admitting also of being elevated or depressed, or thrown forward at pleasure, for the purpose of relieving the grating and hopper or fountain of lumps and other obstructions, in the manner and for the purpose set forth.

GAS REGULATORS—J. W. Hoard, of Providence, R. I.: I am aware that the inverted cup has been and is employed by Kidder, and others, and therefore I disclaim it, irrespectively of the peculiar arrangement and combination described.

I claim the arrangement of the inverted cup so that only the upper side or exterior is exposed to the pressure of the gas, and the under side or interior is exposed to the atmosphere, when this is combined with the application to the said cup of the air spring, f, or its equivalent, substantially as and for the purpose set forth.

[See further notice of this Gas Regulator on another page.]

SCREW WRENCHES—Joseph Hyde, of New York City: I claim the auxiliary jaw or gripper, E, applied to or inserted within either the stationary or movable jaw of a hand or screw wrench, said jaw or gripper being constructed and arranged as shown, or in an equivalent way, so as to bind or press the article between it and the stationary jaw, with a force proportionate to that exerted in turning the wrench, as set forth.

[A description of this invention will appear in next week's paper.]

MAKING PAPER BOXES—Louis Koch, of New York City: I claim, first, the application of a series of rollers connected together, and worked by an arrangement of levers and toes or cams, for the purpose of bringing paper from an endless roll and of a required length, into the machine, and pieces of paper previously shaped and pasted by the machine, to the pieces required, substantially as described.

Second, the application of a stamp frame with suitable knives or stamps attached, situated between the rollers for the purpose of cutting off the paper the required size and shape, from the endless roll, necessary for one box.

Thirdly, the application and construction of the pasting frame, with paste boxes situated between the rollers, and arranged in such a manner as to paste the already slitted paper, in the required places, as set forth.

Fourth, the construction and application of a wheel with arms, having at their extremity the molds attached around which the boxes are to be made said wheel with mold being moved by an arrangement of a rod and lever actuated by a cam in the manner described.

Fifth, the application and use of a series of slides for the purpose of folding the ends of the papers round the mold, said slides being worked by a combination of levers, &c., actuated by toes in the manner set forth.

Sixth, the application and use of a pair of pliers, for the purpose of pulling the finished paper box off the mold, constructed and worked in the manner set forth.

SEVENTH, the construction of the outer mold formed by two sections attached to the frames, and a hinge valve, and the operation and manner of working said valve; the various parts of the whole machine being combined and arranged for the purposes set forth.

GRAIN CLEANER—George Leach, of Owego, N. Y.: I claim dressing or furrowing the stones by having the furrows or grooves, e, f, cut in the face of the bed stone, B, and the furrows or grooves, g, h, in the face of the runner, C, said furrows or grooves being of the form or shape, as shown and described, and for the purpose set forth.

[In next week's Sci. American a further description of this improvement in Grain Cleaners will be published.]

SLEIGHS—W. W. Guivits, of Rodgersville, N. Y.: I claim the combination of the sliding bolsters M M, and friction rollers, H H, with the axle tree, C, and fixed bolsters, M, in the manner and for the purpose set forth.

I also claim the slots, R, in cross bar, V, which permit the movement of the forward runners, without any wrenching.

[See a description of this invention on another page.]

DITCHING MACHINE—R. C. Manck, of Harrisburg, Va.: I claim the described mode of regulating the operation of the cutter or plow, by means of the swinging frame, F, connected with the body of the machine, substantially as specified in connection with the check plates, operating as and for the purposes set forth.

VALVES FOR GAS BURNERS—Andrew Mayer, of Philadelphia, Pa.: I claim fitting the valve cups, b, b, to a tube, G, which forms a valve box in which the cups and valves can be properly fitted without difficulty, and inserted conveniently in their place in the burner or into any chamber prepared to receive them, as fully described.

[A description of this improvement in gas burners may be found on page 300, Vol. 9, Sci. Am.]

EVAPORATING APPARATUS—James McCracken, of Bloomfield, N. J.: I claim the arrangement and use of a set of metallic cylinders containing vertical tubes, as described, in connection with the mode of conveying the escape steam from the pans to the condenser in the manner and for the purpose set forth.

OPERATING PUMPS BY WIND—Hiram Moore, of Charles ton, Mich.: I claim the combination of a compensating cam and spring, or the equivalent thereof for operating a pump driven by windmill, substantially in the manner and for the purpose set forth.

WASHING MACHINES—Elijah Morgan, of Morgantown, Va.: I claim suspending a reciprocating rubber, C, between the yielding D, and the rollers, B, in such a manner that said washboard and bar may both have a vertical motion during the action of the rubber, and at the same time an expansive action or motion due to an over accumulation of the clothes between the rubber and washboard, as described.

[See notice of this invention on another page.]

FIRE EXTINGUISHING COMPOSITIONS—E. F. Overdeer, of Chattanooga, Tenn.: I am aware that peatash and other salts, either alone or mixed with other substances have been used to saturate or cover combustible articles to render them fire-proof. Therefore I do not claim the use of peatash or saleratus for the purpose of preventing ignition, or rendering combustible articles fire-proof.

But I claim the combination of a solution of pearl ash in water in the proportion of 16 pounds of pearl ash, or thereabout, to 100 gallons of water, as a substitute for water in extinguishing fires.

LAMPS—F. C. Rider, of Providence, R. I.: I claim the use of the regulator tube, H, arranged and operated as set forth, in combination with the wick and wick holder, as applied to the inner surface of the wick to regulate and control the flame of light, substantially as set forth.

BRICK KILNS—Jesse Russell, of Elkton, Ky.: I claim the arrangement of the fire chambers outside of the kiln and introducing the products of combustion to the brick to be burnt through avenues or passages extending from the fire chambers, entirely across the kiln, when said fires are placed and used on one side of the kiln only, substantially as described.

ORDNANCE—Christopher Wolter, of Bridgeport, Conn.: First, though I do not claim of itself the mounting of a gun barrel or piece of ordnance upon a universal joint or pivot, I claim the combination of a gun barrel, or piece of ordnance, in such a manner that they may be adjusted and held at any desirable angle relatively to each other, substantially as and for the purposes described.

Second, I claim the connection of the barrels by means of the toggle joints, J, and the central slider, F, working in a suitable guide supported by the carriage, substantially as described, for the purpose of adjusting the barrels at the desired angle.

Third, supporting the breeches for the purpose of varying the elevation of the barrels by means of a frame composed of sectors, D D D D, and slotted heads, C, C, attach thereto, as described, whereby the necessary changes of elevation and of the angle of the two barrels are provided for independently of each other; this I claim, irrespective of any mechanical devices that may be employed to raise and lower the frame.

Fourth, the connection of the two hammers or the triggers or their equivalents by means of two links with sliding pieces, P, operated upon by a cord or chain connected with a rod, r, which passes through the side of the carriage and has a spring, s, applied substantially as and for the purpose set forth.

Fifth, connecting the cord or chain with the rod, r, or its equivalent, by merely passing it through an eye at the end thereof, and attaching it to a which, w, conveniently situated to keep it always wound up to the proper degree to give it the required length, as fully set forth.

[This invention is recommended to Lord Raglan for the use of the Allies in the Crimea. A description of it will be published next week.]

SAFETY FERRY BRIDGE—Henry Lawrence, of New York City: I claim the employment of the reciprocating carriage, G, the suspended central gate, B, and side gates, C, C, the whole being arranged essentially as shown, and operated by the boat and weights, substantially, as and for the purpose set forth.

I also claim making the side gates of a circular form instead of flat so that in case drunken or thoughtless men lay hold of them or get in a position to interfere with their being opened freely, they shall, as they open have a tendency to throw them off instead of forcing them up against the railings, and crushing them, substantially, as set forth.

[This is a life-saving apparatus, and a description of it will be published in the same number of the Sci. Am. in which the "Killer" improved ordnance above, appears.]

CURTAIN ROLLERS—F. W. Ufford, of Saxonville, Mass.: I do not claim the insertion of the end or journal of the curtain roller in a chamber or bearing in the socket that supports it.

But I claim extending the pulley head into the bracket substantially in manner, as described, and for the purpose of protecting the cord of the pulley from getting between the said head, and the bracket during the process of rolling up or unrolling the curtain.

STUMP MACHINES—Edward Vaughn, of Alliance, O.: I claim the arch beams, d, d, the brace posts, l, l, in combination with the incline braces, c c, c, and horizontal beams, a, making a new and useful, firm, and compact frame, as set forth.

Also the combination of a half sphere, and groove, i, forming a new half spherical washer, g.

Also the combination of the grooves, k, opening, j, with a square recess, m, for the purpose as set forth.

Also for the purpose of attaching and detaching the trucks, H H, to and from sills, c, by the combination of levers, h, h, fulcrums, r, r, joints, q, q, posts, t, dogs, v, and levers, l, as set forth.

Also the securing of the bar, K, to the hounds, J, J, as set forth.

I do not claim any one separate thing in the above mentioned invention; but I claim the combination as set forth.

[See description of this invention in No. 10 present volume Sci. Am.]

DOOR LOCKS—Wm. Warwick, of Birmingham, Pa.: I claim so forming the tumbler with beveled edges for the key to operate it, and so arranging it in relation to the bolt and the stud, z, that when locked, the bolt is held firm against pressure, by the tumbler fitting over the stud, z, as set forth.

RAVES GUTTERS OF HOUSES—G. W. Wheatly, of Harrodsburg, Ky.: I claim the application of a bead or molding, together with the stop or gutter, of the description above, giving strength to the gutter without the aid of a plank or other substance.

BREECH-LOADING FIRE ARMS—Rollin White, of Hartford, Conn.: I claim the connection of the breech with the hammer, in such a manner that it may be withdrawn to open the chamber to receive the charge by the act of cocking the hammer, and replaced to close the chamber by the falling of the hammer when the latter is set free to explode the charge, substantially as set forth.

BREECH-LOADING FIRE ARMS—Rollin White, of Hartford, Conn.: I claim, first the connection of the breech or breech piece, with the hammer in such a manner that the latter may be cocked by the act of moving the former into its place to close the chamber, substantially as set forth.

Second, the peculiar manner of effecting the cocking and setting force of the hammer by means of the spring loading D, attached to the breech or breech piece and the sliding piece, d, working in the tumbler to be acted upon by the trigger for the purpose of disengaging the said tooth, substantially as set forth.

Third, the arrangement of a crank or eccentric, f, arranged and operating substantially as described, for the purpose of disengaging the tooth H, from the tumbler, and thereby disconnecting the hammer from the breech or breech piece, when the immediate repetition of the discharge is not desired.

[The above patents granted to Mr. White are important improvements, but cannot be well described without engravings. Mr. W. has several other inventions in the same line, on which patents will soon issue.]

PROCESSES OF CURING MEATS—J. C. Schooley, of Cincinnati, O.: I claim the process of curing meat and preserving it, in accordance with the provisions of the act of Congress, as officially dried by ice, or its equivalent, through the room wherein the curing takes place, substantially as and for the purposes set forth.

MANUFACTURE OF STONE PASTERBOARDS—James Smith, of Mendon, N. Y.: I do not claim the use of bole of any kind, or chalk of any kind, or Spanish white, or glue, or paper pulp, or linseed oil, either separately or he w combined, nor do I in any manner use bole, chalk Spanish white, or glue, or a compound of which they form a part.

But I claim the process of coloring, staining, and other purposes, made or constructed in the manner described, or other equivalent means, by combining said stone when pulverized with paper pulp.

I also claim the application of and combining drying oil with said pulverized stone and paper pulp, combined in sheets as above said, in the manner described, or in any other equivalent manner, so as to produce the results specified, or others substantially the same.

MACHINERY FOR SPINNING WOOL—F. S. Stoddard, of Litchfield, Conn.: I claim, first, conducting the ovine from the front of the front drawing rollers, by means of a bridge or rest, with fingers, a, on it situated between the front and back pairs of drawing rollers, for the purpose of governing the counter twist so as to adapt a smaller portion of it to the part of the thread nearest the back rollers.

Second, impeding the traveling travelers when winding upon the front or back parts of the cones, by means of a series of brushes, q, q, or their equivalents, operating substantially as set forth, so as to gradually set the traveler free as the winding approaches the molder or upper ends of the cones, thereby producing a uniform tension on the thread while winding.

[Mr. Stoddard's invention will be described, as well as it can be without engravings, in next week's Sci. Am.]

AIR HEATING PIPES—J. H. Sutton, of Honesdale, Pa.: I claim the arrangement of the burner, A, B, the descending smoke pipes, c, c, and the central smoke pipe, D, with each other and with the single air-heating chamber, D, substantially in the manner and for the purpose set forth.

[See notice of this Furnace on another page.]

APPARATUS FOR OPERATING VENTILATORS—J. P. Trimble, of Lyndon, N. H.: I do not claim effecting the ventilation of buildings, &c., by operating the valves to the vents or air passages by the force derived from the expansion of metal as this has been before proposed.

But I claim having the valves or ventilating doors connected to the said metal bands, about midway between their fixed supports, so that the varying degrees of flexure shall effect the operation of opening or closing said doors in the manner and for the purpose described and shown.

BENZOLE VAPOR APPARATUS—Charles Cunningham, of Natick, N. H. (assignor to J. G. Pedrick) of Boston, Mass.: I claim first, the combination of the heater, w, and the swinging gas burner, v, or of the induction air pipe, A, and any one of the portions of the apparatus, with the water vessel, n, the reservoir, k, or the molder, a, and actually as herein described, for the purpose of keeping the contents of the vessel containing the benzole or light-producing liquid at a given temperature.

Second, the combination of the reservoir, k, and the rotary disseminator, n, with an ordinary rotary meter wheel, substantially as described, for forcing air from the hollow shaft or its equivalent, into the reservoir, k, for the purpose of vaporizing the benzole of the latter vessel.

Third, the particular mode of making the rotary disseminator, n, substantially as described, and for the purposes specified, not meaning to claim the use of the hollow shaft or its equivalent, for the purpose of forcing air into the reservoir.

Fourth, the application and use of the meter wheel with its case and cover, is, as an air blast apparatus, operated by weights or otherwise, not meaning to claim the method of using the meter, for measuring gas.

CULTIVATORS—S. A. Knox, (assignor to Ruggles, Nourse, Mason & Co. of Worcester, Mass.): I do not claim combining a curved and pointed knife with a common hand plow, when said knife is placed against or very near to the nose of the plow, my employment of a trapezoidal tooth or behovish hoe being in addition thereto, and for a different purpose from its use on a plow.

But what I claim is arranging the curved knife or pointed tooth, K, at or near the root end of the beam of the horse hoe, while the man or driver, h, G, is disposed at or near the rear end of the beam, and so to enable the said tooth to be used in the manner and for the purposes as stated, it being employed in a common plow, simply for cutting the soil or opening it for the reception of the nose of the plow.

NO INVENTIONS.

DESIGN FOR METALLIC COFFINS—Martin H. Crane, assignor to Crane, Reed, & Co., of Cincinnati, O., patented Jan. 23, 1855: We claim the ornamental pyramidal design for a metallic case of coffin, substantially as described and represented.

MACHINERY FOR SEPARATING FLOUR FROM BRAN—Isaac Charles F. and Jas. Mo. use or invention, which patented Feb. 27, 1849: We do not mean to entitle to the original inventor of a cylinder, nor of a cylinder covered with pointed strips of sheet iron and a pair of rollers, filled with sacks, such as are used in grain machines, nor the gearing by which the machine is propelled.

But we claim, first, the platform D, (always at right angles with the sides of the hopper when it is made convex) or close horizontal bottom when used in connection with upright, stationary or revolving rollers for crushing purposes.

Second, the opening at D, for the admission of a counter current of air through the bottom and into the hopper, and the opening and its support, F, as described in combination with the platform, D.

Third, the upright stationary bolt, or bolt and scourer combined with its clothes, l, l, e, e, p, p, or an and material, or in combination with clothes, l, l, e, e, and fourth, or either of them, or their equivalents, to produce like results in the flouting process.

Fourth, the use of the revolving, distributing scouring, and blowing cylinders of beater and comb, by which the material is distributed, scattered, and the flour blown through the meshes of the bolting cloth.

[No less than sixteen of the patents in the above list were prepared at the Scientific American Office. Advice concerning patent matters is cheerfully given, orally, or by letter, without charge, upon application to this office. Circulars of information may be had upon application addressed to MUNN & CO., SCIENTIFIC AMERICAN OFFICE, NEW YORK CITY. See advertisement on advertising page.]

The New Postage Law—Important to the Public.

The Post Office Department calls attention of Postmasters and the public, to the new postage law, requiring that all letters between places in the United States shall be pre-paid from and after the 1st of April, 1855, by stamps or otherwise, and that from and after the first of January next, Postmasters must place postage stamps upon all pre-paid letters upon which such stamps may not have been placed by the writers, or which may not be enclosed in stamped envelopes. From and after the first of April, 1855, the postage to be charged on each single letter for any distance in the United States not exceeding 3,000 miles, is three cents, and over 3,000 miles, ten cents. The law does not change the existing rates or regulations in regard to letters to or from Canada or other foreign countries, nor does it affect the franking privilege. The provisions in regard to the registration of valuable letters will be carried into effect, and special instructions issued to Postmasters on the subject, as soon as the necessary blanks can be prepared and distributed.

Fall of Black Snow.

Prof. Fairchild, of Oberlin, Ohio, states that on February 7th, they had in that region a fall of dark-colored snow. The crystals were in the form of dense icy pellets, about the twentieth of an inch in diameter. It fell to the depth of nearly an inch, and when melted it yielded about a half inch of water. The snow had a distinct smoky taste, and on filtering it through paper a dark, sooty substance was obtained.

Chalk.

A specimen of this calcareous earth was shown us this week by A. G. Lawrence, Esq., of Campo Seco. It forms the base of a hill in that vicinity, the surface of which is a volcanic drift, containing a very rich gold deposit—which pays from \$3 to \$10 a cart load. The chalk hill has not been penetrated to any considerable depth, but it is likely that underneath this deposit, gold will be found. A curious phenomenon may be observed at this hill—one part of it is composed of chalk, while the other is the usual red clay formation, the line of demarkation being plainly visible.—[California Chronicle.]

Fire-Proof Floors.

If builders filled up the spaces between every wall and flooring with sea sand, no fire could communicate from one apartment to another. The staircases, if constructed of iron, on the geometrical principle, would prove non-conductors, space would be economized, and the chamber enlarged. Balconies running from house to house on every floor, are the most desirable of all fire escapes.

To Kill Ants.

A correspondent writing to us states that if boxes were put round the ant hills in Texas, and toads put into them, the latter will soon destroy the ants, unless Texas toads are different from those in New York. One toad, he says, will destroy a nest of northern black ants in one or two nights. We rather think that the Texas ants are not so easily managed as our northern kind. They are more numerous, stronger, and bolder marauders.

Saw Filing Machine.

The Bangor *Whig* (Me.) speaks very highly of the patent saw filing machine of Thomas M. Chapman, of that place. It states, that it does the work of three men, and files every tooth true and smooth, and in the course of one season saves the price of itself in mill files used in a saw mill.

The railway between Alexandria and Grand Cairo, in Egypt, a distance of 130 miles, is nearly completed. There is a tubular bridge on it over the Nile.

The distress in England has been very great during the past winter, owing to the severe frost, by which the rivers and canals were all frozen for some weeks.