Movement of Troops.

Every day witnesses the departure of troops from this city. Colonel Durvee's regiment of Zouaves. which was reviewed on the 23rd ult. with so much favor, is now quartered at Fortress Monroe, under command of General Butler. This regiment is made up of brave, determined men, and under command of the gallant Duryee will do service that will make the country proud of them. 'The Eighth Regiment (German rifles), composed of 1,046, under command of Colonel Blenker, went to Washington on the 27th. The officers are men who have had much experience upon the battle fields of the old world. Colonel Blenker was in the Grecian army, and took part in many battles, particularly those of Achino and St. Marino, after which engagements King Otho promoted him to a place upon his staff, and presented him with medals of honor; he was subsequently commander-in-chief of the army of the revolution. He has a thorough military education, and is regarded as one of the best soldiers now in the field. The uniform of this company is admirable, consisting of gray pants, and a loose gray coat, with a short belt, by which it can be tightened or loosened about the waist at pleasure, and they are armed with Sharp's rifles. A corps of sappers and miners preceded the soldiers, provided with axes, spades, picks and other tools likely to be needed in this department, and a long leather apron. They have two ambulances and about eight horses, some of which belong to the officers. Each company has two portable cases containing bandages, lint, plasters, chloroform, and other articles necessary for hospital use. A large body of citizens escorted the regiment to the depot at Jersey City, where they took the carsfor Washington, singing a German song of departure for the wars, as the long train moved off.

The Ninth Regiment, under command of Colonel Styles, which, as regards physical ability, moral training and intelligence, is not to be excelled by any in the Constitutional army. It is composed of over 800 men. This regiment started for Washington at the same time with Colonel Blenker's, the whole force occupying thirty-seven cars.

The Garibaldi Guard departed for Washington on the 28th. This regiment is composed of foreigners, a very large proportion of whom have seen service. It is commanded by Colonel d'Utassy, an experienced and able officer, who has served, as well as most of the other officers, in the wars of Hungary, Italy and the Crimea.

Colonel Bartlett's Naval Brigadeconsists of over one thousand men. This brigade was ordered to Fortress Monroe on the 29th to co-operate with General Butler in the approaching demonstration upon Norfolk.

REGIMENTS IN THIS CITY.

On the 27th ult. there were quartered in this city the following regiments:—

Naval Brigade, Colonel Bartlett; Excelsior Brigade, General Sickles; Empire City Regiment, Colonel Sheehan; Thirty-sixth (Connaught Rangers), Colonel McCunn; Anderson Zouaves, Colonel Ricker; British Volunteers, Lieut. Colonel Torre; President Guards, Colonel Goodwin; Imperial Zouaves, Colonel Merritt; Washington Volunteers, Colonel Innes; Second Regiment Fire Zouaves; Mozart Regiment, Colonel Cocks; Tammany Regiment, Colonel Kennedy; Third Regiment, Colonel Townsend; Fourth Regiment, Colonel Hawkins; Tenth, Colonel McChesney; Fifteenth, Colonel Hawkins; Tenth, Colonel McChesney; Fifteenth, Colonel McLeod Murphy; Seventeenth, Colonel Lansing; Twentieth, Colonel Weber; Twenty-fifth, Colonel Kenyon; Twenty-ninth, Colonel Steinwehr; Thirty-first, Colonel Pratt; Thirty-fourth, Colonel Mathewson; Thirty-eighth, Colonel Ward.

These regiments are rapidly preparing to take the

These regiments are rapidly preparing to take the field. They will constitute, when fully equipped, a more formidable army than the government has hitherto employed in times of peace. General Sickles' brigade is to embrace ten thousand men.

VALUE OF A MOUSE TRAP.—A correspondent—R. T. Martin, of Winona, Minn.—in a letter to us, says :-"On page 115, Vol. 12 (old series), Scientific American, there is an account given of a cheap mouse trap, which consists of a pipe-bowl filled with cheese and placed under the edge of a tumbler. This alone has been worth to me, more than all I have paid for your paper, which I have taken for eight years.'

RUSSIAN PACIFIC TELEGRAPH.—The plan for establishing a telegraphic line connecting Europe, through Siberia, with the Pacific ocean, has been undertaken by the Russian Ministry of Marine. It is expected that the entire line from St. Petersburg to the Pacific will be completed in five years.

Wells' First Principles of Geology .- The in quiry is often made of us, what book we can recom mend to students and others who are desirous of acquiring an elementary knowledge of geology. Having had an opportunity of thoroughly examining a work recently published by Messrs. Ivison & Phinney, of this city, the title of which we give above, we are able to answer the question to our utmost satisfaction. The author, Mr. David A. Wells, is well known to the public, especially to those interested in school books, for his admirable works on chemistry and natural philosophy, and also as the editor of the "Annual of Scientific Discovery." The work in question cannot fail to enhance his reputation. This subject of geology, usually so obscure to a beginner, he has treated with the utmost simplicity, and yet with great thoroughness, avoiding as much as possible the use of dry technicalities and minute discussions. The applications of the subject to the arts and every day life are also fully noticed, which give to the book a freshness and interest, and render it exceedingly attractive. The illustrations are numerous, and different entirely from the old stereotyped pictures which have been doing duty for years. For elementary instruction we cordially recommend this work as by far the best of any before the public; advanced students who are desirous of posting themselves respecting the latest views and theories in geology will find it exceedingly interesting and valuable for reference.



ISSUED FROM THE UNITED STATES PATENT OFFICE FOR THE WEEK ENDING MAY 14. 1861.

Reported Officially for the Scientific American

*** Pamphlets giving full particulars of the mode of applying for a tents, under the new law which went into ferce March 4, 1861, specifying size of model required, and much other information useful to in ventors, may be had gratis by addressing MUNN & CO., Publishers of the SCIENTIFIC AMERICAN. New York.

1,266.—John Adt, of Waterbury, Conn., for an Improve-ment in Latch Bolts: I claim the latch, B, in connection with the cylinder, C. provided with the hole. e, rod, E, with spring, g, applied, and the cross bar, F, when arranged to operate as and for the purpose set forth.

[The object of this invention is to obtain a combined lock and latch of very simple construction and one that may be economically manufactured. The invention consists in applying to an ordinary slide latch a locking cylinder, spring, rod, and a cross-bar, whereby the desired resultis obtained.

1,267.—Charles Askam, of Philadelphia, Pa., for an improvement in Children's Carriages.
I claim the car-shaped springs. G G, the body, H, therear axle, E, and cross bar, C, when constructed, arranged and combined, as and for the purpose set forth.

for the purpose set forth.

1,268.—Henry Benton, of Guilford, Conn., for an Improvement in Children's Flying Tops;

I claim the employment or use, in combination with a spinning top, of spiral flanches, B, so applied as to give the top a rising and falling movement, simultaneously with its rotating one, substantially as set forth.

(This invention consists in providing a spindle with a series of spiral lanches, in such a manner that, by rotating the spindle by means of a top-cord, the flanches will cause the spindle to rise or ascend a certain distance before it comes in contact with the ground or floor, there by combining a rotary and an elevating movement which greatly adds to the amusement of spinning tops.]

1,269.—L. S. Bundy and L. F. Edgerson, of Hyde Park, Vt., for an improvement in Corn Shellers.

We claim the construction and arrangement of the feeder, D, spring, d', uprights, D' and E, with cogs, d, as and for the purpose set forth.

1,270.—L. C. Chase, of Boston, Mass., for an improved mode of stringing Sleigh Bells:
I claim constructing a sleigh bell with two shanks, a a, and a hole between them, and confining it to the strap by means of a single river passing through the strap, between said shanks, and headed down inside of the bell, substantially as described and for the objects specified.

1,271.—Ira Cooper, of Saybrook, Ohio, for an Improve-ment in Cultivators:

I claim the special arrangement of the adjustable mold-board, F, in combination with the mold-boards, A A, space, A', coulter, L, and braces, F, O, M, N, when arranged in the manner and for the purpose set forth.

1,272.—N. T. Edson, of New Orleans, La., for an Improved Wheelwright's Machine:
I claim the combination of the form or stand, L, G, 4, bolt, B, head peece, 1, ring, 5, and supporting tube or thimble, A, constructed and operated substantially as described.

perated substantially as described.

1,273.—W. T. Clement, of Northampton, Mass., for an Improvement in securing Handles to Hoes:

I claim the fixing of handles to hoes and other tools by the combination of the screw shank, B, which is a combination of the tool itself with the taperiag socket, C, and perforated and tapered handle, D, so hat the tool is fixed to both, C and D, substantially in the mannerand to as to possess the advantagesset forth.

1,274.—J. P. Ellicott, of Washington, D. C., for an Improvement in Apparatus for Irrigating Streets:
I claim the cap, c, with its concave sides, ff, for the purpose of flatening the water issuing from the jets or periorations, b, thereby conforming the same to the arch of the street, and at the same time

serving as a protection to the pipe, E, and perforations, b b, as set Second, in combination with the above, I claim the perforated pipe, B, for the purpose and use expressed.

1,275.—S. M. Fales, of Baltimore, M.d., for an Improvement in Refining and Smelting Furnaces:
I claim extending one or more of the arches, A, of the furnace, B. D, constructed as set forth in my patent dated Feb. 8th, 1859, and having the said extended arch or arches communicate by a flue with an auxiliary stack or chimney, or with a series of anxiliary stacks or chimneys, C, substantially as and for the purposes set forth.

neys, C, substantially as and for the purposes set forth.

1,276.—S. M. Fales, of Baltimore, Md., or an Improvement in Refining and Puddling Furnaces:
I claim, first, the combination with my improved patented furnace, bearing date Feb, 8, 1859, of a puddling chamber, D', a secondary draft chimney or stack, F, and a division wall, E, with draft passage, b, through it, substantially as and for the purposes set forth.

Second, The combination with the puddling chamber, D', perforated division wall, E, draft chimney, F, stack or cone, D, of the furnace, patented to me and bearing date Feb, 8th, 1859, of a return pipe or passage, G, substantially as and for the purposes set forth.

1,277.—I. J. Fearing, of South Weymouth, Mass., for an Improvement in Button-Hole Cutters:
I claim a supplemental cutting blade, A, constructed substantially as described, and applied to a pair of scissors, to operate substantially as and for the purpose set forth.
[See engraving in this number.]

1,278.—Joseph Forrest, of New York City, for an Improvement in Machines for Breaking Sugar:

I claim the combination of two grooved rollers, , and E, working together, one of which is grooved lengthwise, the other circumferentially on its periphery, and one or more pairs of rollers armed with teeth, the whole arranged substantially as and for the purpose set forth.

te eth, the whole arranged substantially as and for the purpose set forth.

1,279.—J. S. Gauson and C. T. Coit, of Buffalo, N. Y., for an Improvement in Fire Places:
First, We claim so constructing the fire back, B, as that it will extend upward and above the mouth of the chimney and then downward and forward, as shown at b', with semi-circular bend, b2, receding again upwardly as shown at b', for the purposes and substantially as described.

Second, Said fire back being constructed substantially as described, we claim in combination and arrangement therewith the jacket, N, for the purposes set forth.

Third, We claim the combination of the tube or air chamber, L, with the recess, D, as and for the purposes set forth.

2,280.—John S. Getchell, of Machias, Me., for an Improved Combined Capstan and Windlass:

I claim the combination with the vertical capstan herein described of the box, C, gear wheels, F, f, shafts, G G', shaft, I, drum, J, and movable standard, K, all arranged and operating substantially as and for the purposes set forth.

This invention relates to the combination with a ship's capstan of a windlass so that either one or the other may be employed, as occasion

1,281.—D. F. Goodhue and E. H. Carey, of Cincinnati, O., for an Improvement in Wheel Carriages:

We claim the combination herein described of the spokeless rings, G. grooved supporting wheels, B. axle, C. grooved guide rollers, H.H. H./, and springs, F. the whole being constructed, arranged, and operating in the manner and for the purposes set forth.

1,282.--W. C. Grimes, of Philadelphia, Pa., for an Improve-mentin City Railroads: I claim the double track, C and D, constructed substantially as de-scribed and for the purpose set forth.

scribed and for the purpose set forth.

1,283.—F. R. Grumel, of Geneva, Switzerland, for an Improvement in Photographic Album:

I claim, first, the construction of leaves for albums for collection of photographic or lithographic proofs, engravings or other drawings, or drawings may be inserted back to back, thereby showing one on either side, substantially as shown and described.

Second, The formation of leaves for photographic or other album by combining with a front and back framing leaf a center leaf recessed and of such thickness as that when containing one or two photographic cards, they shall be flush with the general surface of the leaf, as specified.

fied.

Third, The construction of leaves for photographic or other album, by pasting or otherwise permanently fixing the frontand backframing leaf on to the center leaf on three sides thereof, leaving one side open and freefor the insertion of photographic cards or drawings, as described

and free to the insertion. From Seribed. Fourth, In combination with leaves constructed and arranged as described, I claim the filling wice for closing the gas formed for the ready insertion of the photographic cards, between the framing leaves substantially as specified.

1,284.-James M. Hicks, of Boston, Mass., for an Improve-

1,284.—James M. Hicks, of Boston, Mass., for an Improvement in Erasers:
I claim, first, Providing the eraser blade with an independent back made of bone, rubber, ivory, wood, or other suitable animal or vegetable substance or substances, separate or combined, essentially as and for the purpose or purposes set forth.
Second, Forming an independent supporting and burnishing back to the blade by extending the handle which carries the latter, substantially as described.
Third Uniting the blade with the handle by inserting it in a cross.

ly as described.

It is a described.

Third, Uniting the blade with the handle by inserting it in a crosscut or slot in the end of the handle, in combination with riveting or holding it by pins to the independent back formed by extension of the handle, essentially as specified.

Fourth, The combination with an erasing blade of metal or its equivalent and handle thereto, of an india rubber eraser or burnisher, as set forth.

1,285.—J. J. Hirshbühl, of Louisville, Ky., for an Improve-

1,285.—J. J. HIRSHWIII, OI LOUISVINE, MY, 101 an Improvement in Locks:

I claim, first, The employment or use of the latch-bolt, E, when combined with umblers, G G', one or more, a catch, H, and a nosing, D, provided with a slot, a, arranged as and for the purpose set forth. Second, The side bolt, K, when used in connection with the latch bolt, E, tumblers, M N, dog, L, and the rod, O, on the latch bolt, E, as and for the purpose specified.

[The object of this invention is to obtain a lock that will be burglar more or unvisitable and still be simple in arrangement and economi-

proof, or unpickable, and still be simple in arrangement and economical to construct.]

1,286.—C. C. Hoff, of Pough keepsie, N.Y., for Mastic Composition for Roofing:
I claim the described composition of gas tar, treated and prepared in the manner specified, black oxyd of manganese, boiled plaster of Paris, alum, and calcined charcoal, mixed together in the manner and about in the proportion stated, and applied to the canvas, substantially as and for the purpose set forth.

1,287.—H. S. Holmes, of Lynn, Mass., for Improvement in Congress Gaiters:

Congress Gaiters:
I claim securing the upper edge of the cloth of the front and heel parts of a Congress gaiter top to their respective linings by an inside seam, b figs. 8 and II, when such seams are used in connection with gores of elastic cloth attached to the gaiter top and lining, by a seam commonto all, the whole being effected in the manner described and for the purposes set forth.

-Nelson Homes, of Leona, N. Y., for an Improved

JASS.—Nelson Rulines, or Declar, A. A.A. A. and bands, L. I. claim the combination of the bars or slips, A.A.A., and bands, L. in their application to brooms and brushes, as described, the whole eling arranged and operating substantially as and for the purpose set

1,289.—B. B. Hotchkiss, of Sharon, Conn., for Improved Projectile for Rifled Ordnance:

I claim, first, The arrangement of the inclined surfaces or cones, B, and f, and the cylindrical portion, a, in connection with the ring of soft metal, D, placed between B and f, substantially as and for the purpose specified.

metal, D, placed between B and I, substantially assumed a specified.

Second, I claim the employment of a quantity of lubricating material, E, within proper recesses in the body of the projectile and in front of the belt, D, so arranged that a portion of the whole shall be forced out to lubricate the bore, by the action of the metal ring, D, or its equivalent, substantially as specified.

Third, I claim the employment of the projecting ring, G, made to fit the bore of the gun, in combination with the cap, F, and belt, D, substantially as and for the purpose herein set forth.

Fourth, I claim, covering the belt, D, with cloth or other suitablematerial, H, wound spirally thereon, substantially as and for the purpose above described.

Fifth, I claim cutting the patch, H, after the belt, D, has been sufficiently expanded by means of the lips, C, f', or their equivalents, substantially as and for the purpose specified.

1,290.—H. J. Howe, of Onarga, Ill., for Improvement in

1,290.—H. J. HOWE, OI OHAIGA, AIL, 101 AMPROVEMENT IN CORP Planters:
I claim, first, The arrangement of the tappet, K, on axle, L, the lever, J, segment rack, H, with sliding weight, h, and pinion, d, on shaft, G, substantially as and for the purpose set forth.

Second, The arrangement of the bent lever, B', attached to the frame, A, and draft pole, C', the semicircular racks, A', and pawl stop, a', as and for the purpose set forth.

[This invention relates to a novel and improved means for operating the seed-distributing device, whereby the latter may be actuated by the driver when planting in check-rows is required; or, actuated automa cally from one of the ground wheels when it is designed to plant in row for cultivation, in one direction only.)

1,291.—S. W. Howland, of Adams, Mass., for an Improvement in Knitting Machines:
I claim the changeable pressing sinker plate on the wheel, so as to eable to ship one or more needles, and press the other, simply by changing this plate without changing the whole wheel.

1,292.—John, Jefferson, and James McCausland, of Rondout, N. Y., for Improved Steering Apparatus:

We claim the arrangement of the pin or stud, b, in combination with the hinged reversible tiller, A, as and for the purpose shown and described.

a.—William Jones, of Brooklyn, and Patrick Hang-ain, of New York City, for improvement in Sewing fachines: claim, first, the side-pointed needle, as described. ad, The combination of the needle with the fork and shuttle, as 1.293.

Second, the combination of the guide with the fork and needle, as described.

Third, The combination of the guide with the fork and needle, as fourth. The combination of the feed chain with the fork and needle,

as described.

Fifth, Retaining the needle thread, in making the stitch, on the side of the needle opposite to the shuttle, substantially as set forth.

1,294.—Henry Knight, of Jersey City, N. J., for an Improvement in the Manufacture of Hydraulic Cement Pipes:

Pipes:

I claim, first, Manufacturing cement pipes with metallic pipe intermediate between its inner and outer surfaces, by arranging the metallic pipe over the core, B, and within the mold, F, so that it divides about equally the space between the core and the mold, and then placing an annular centering device, I, between the pipe and the mold, and introducing the cement first between the metallic pipe and the core, and then between the pipe and the mould, all substantially in the manner and for the purpose described.

Second, Finishing the sections of the combination pipes at one of their ends with a metallic coupling extension, J, by means and in the manner substantially as described.

manner substantially as described.

1,295.—Thos. Langdon and H. C. Kellogg, of Quasqueton, Iowa, for an Improved Broom:

We claim the employment or use of the wedge, E, and screw, C, attached to handle, A, in combination with the cap, D, the above parts being applied to the broom corn, I, and all arranged substantially as and for the purpose set forth.

We further claim, in combination with the screw, C, wedge, E, and cup, D, a cross rod, H, attached to the clasp, G, and passing through the eye, a, of the screw, to prevent the casual turning of the latter, as specified.

whereby brooms may be manufactured by any one unskilled in the art as at present practiced, and farmers and others who raise broom corn may keep themselves supplied with brooms of their own manufacture at a trifling cost.]

1,296.—Denis Lenain, of New York City, for an Improve

1,296.—Denis Lenain, of New York City, for an Improvement in Boots and Shoes:
I claim the construction of boot heels with a bolt, E, passing down through the sole into the shell, C, and through the filling block, D, where the screw receives a nut, d, all of the above parts being arranged as shown, and employed in connection with the bottom leather cover, F, as setforth, for the purposes described.

[This invention relates to an improvement in the heels of boots and show and heef on its object durability. Hightness, facility and economy

shoes, and has for its object durability, lightness, facility and economy in the construction thereof, as well as facility in repairing the sam

1,297.—M. H. Mansfield, of Ashland, Ohio, for an Improve-ment in Hangers for Shafting:

I claim the making of journal boxes for shafting for threshing ma-chines adjustable, horizontally, vertically and obliquely, by means of the standards, A., ring, E., and screws, C. C. and F.F., when arranged in relation to the journal box, G., as specified, thus giving it free motion in every direction, as and for the purpose set forth.

-J. S. Marsh, of Lewisburg, Pa., for an Improvement in Seed Drills:

in Seed Drills:

I claim, first, The combination of the distributing roller, F, hinged journal, G, of the distributing roller, sliding bearing plate, J, having curved slots, e.e. in it, supporting casting, K, coupling pins, d, pinion, H, spur wheel, I, lever bar, E, with crank-shaped journal, g, on its end, and drill teeth, D, substantially in the manner and for the purpose set forth.

purpose set forth.

Second, The combination of the crank-shaped journal, g, slotted bear ing slide or plate, J, and hinged journal, G, in the monner and for th

purpose described.

Third, The combination of the revolving cellular distributing roller, E, hopper, E', sliding seed gate, N, slotted lever plate, P, and guide casting, O, in the manner and for the purpose described.

casting, 0, in the manner and for the purpose described.

1,299.—Henry Maule, of Philadel phia, Pa., for an Improved Time Tell-tale:

I claim the door, B, with slits, e and f, arranged at suitable intervels the permanent plate, F, of slate, or other suitable material, and the intervening detachable plate, E, with its single slit, i, the whole being arranged, applied to a clock and operating as set forth, so that it is impossible to mark the plate, F, through any slit of the door other than that which coincides with the slit, i, of the plate, E, as specified.

1,300.—William McClure, of Peebles, Pa., for an Improved Sad Iron:

Sat Iron:
I claim the use of a shoe, constructed substantially as described, so as to fit on the bottom of sad irons, and so arranged with spring lugs or other mode of attachment as to be easily attached to the iron or removed therefrom at pleasure.

1,301.—W. H. Miller, of Philadelphia, Pa., for an Improved Low Water Alarm for Steam Boilers:

I claim the metal tube, L, and the float valve, M, working within the glass tube, G, in the manner and for the purpose specified above and for no other purpose.

or no other purpose.

1,302.—Daniel Miller, of Marietta, Ohio, for an Improved Cork Fastener for Bottles:

1 claim, as an improved article of manufacture, a bottle cork fastener hat has the arms, a, ofits cap, b, pivoted in the rear of the center of he neck collar, B, and otherwise made as shown and described.

[This inven.ion is applicable to any kind of bottles which are used for

holding fermented liquids, but it is more especially intended for mineral water bottles for holding the corks in the bottles, and to take the place of wire fastenings now so numerously used on mineral water bottles.]

1,303.—Samuel Mowry, of Whomelsdorf, Pa., for an Improvement in Horse Rakes:
I claim the combination of the bentarm, s, and catch, t, with the levers, H and e, and their connecting mechanism for operating the rake, when the several parts are arranged for joint operation, in the manner described.

1,304.—William Nugert, of Chicopee, Mass., for an Improvement in Picker Motion:
I claim the rocker, E, constructed with a straight bottom and downward projecting piece, e, and the bex, D, constructed as described, to receive the bottom of the recker and contain the bed for the same to work upon, and with a dovetall recess, f, in front for the reception of projection, e, the whole combined substantially as set forth.

1,305.—S. E. Oviatt, of Richfield, Ohio, for an Improvement in Threshing Machines:

In Infeshing Machines:

I claim the wire cloth diaphragm, E'', in combination with the revolving screen, E', and thresher, for the purpose set forth.

I also claim the canvas covering or hood, M, in combination with the stacker, for the purpose specified.

1,306.—Suspended.

1,307 .- Thomas Patterson, of Rush, Ill., for an Improve-

ment in Plows:
I claim the plow body, G, secured to jointed beam, E, as describe combination with straps, d d lever, F, jointed bar, h, chains, K K, jointed sliding crosstree, D'. all arranged and combined with wheels B B', axle, A, and draught pole, D, as and for the purp set forth.

 $[This\ invention\ is\ an\ improvement\ in\ operating\ turn\ plowshares\ for\ an improvement\ in\ operating\ turn\ plowshares\ for\ operating$ very heavy or light plowing, wherein the plow is supported under a carriage, and raised and depressed by the plowman while sitting on carriage.]

,308.—Thomas Powers, of Philadelphia, Pa., for an Improvement in Gas Regulators:

I claim the combination and arrangement of the double-acting bal alve, A, with the hollow sliding tube, L, and the perforated hemipherical disk, K, operating substantially as set forth.

spherical disk, k., operating substantially as set forth.

1,309.—J. R. Robinson, of Boston, Mass., for an Improvement in Steam Boiler Furnaces:
I claim the two walls, C. D., and their interposed chamber, E. and passages, dee, constructed and arranged between the fire chamber, A. and gas mixing chamber, B, substantially as and for the purpose specified. And in combination with the said walls, interposed chamber and passages, I claim the described arrangement of the passage or passages, f, for the purpose specified.

310. Thomas Sanford of Claramont N. H. for an Improvement of the passage of the pass 10.—Thomas Sanford, of Claremont, N. H., for an Improved Steam Cock:

proven Steam COCK:

I claim my improved steam cock, as constructed with its parts, B C, hollow and to screw together, or one on or in the other, and with one of them provided with a lateral opening, d, substantially as specified, the whole being applied to the stem, D, and partition, c, as and so as to operate as described.

operate as described.

1,311.—J. P. Sherwood, of Fort Edward, N. Y., for an Improvement in Sewing Machines:

I claim, first, In combination with a needle and shuttle, applied, combined and operating together as specified, the employment of the drawback mechanism, operating to draw back the whole of the slack of the needle thread loop through the cloth between the first and second passages of the shuttle through it, substantially as described.

Second, Though I do not claim broadly the employment of rollers in the presser foot, I claim the combination of the laterally oscillating foot, T, and the rollers, g g, having a convex longitudinal profile, substantially as and for the purpose specified.

1,312.—Lorenzo Sibert of Mount Solon Va for an Improved T.

stantially as and for the purpose specified.

1,312.—Lorenzo Sibert, of Mount Solon, Va., for an Improvement in Magazine Firearms:

I claim, first, The combination of the series of magazine tubes, B, with the barrel, A, and breech, D, substantially in the manner and for the purpose described.

Second. The conveyer, G, when arranged and operating substantially as set forth.

Second. The conveyer, G, when arranged and operating substantially as set forth.

Third, An open breech, so constructed as to permit the unobstructed passage of a cartridge directly through the same from top to bottom, substantially in the manner described.

Fourth, The combination of the fluted rollers, F F', or their equivalent, for the purpose of fortuing an open chamber to receive and hold the loaded cartridge, and discharge it when exploded.

Fifth, The combination of the rnagazine tube, B, conveyer, G, hammer, J, and fluted rollers, F F', or their equivalent, substantially as and for the purpose set forth.

Sixth, Expelling the empty cartridge case from the discharge chamber by means of the succeeding cartridge, substantially in the manner described.

cibed.

venth, Discharging the empty cartridge cases automatically into a
nber in the stock of the gun, where they may be preserved for

future use.
Eighth, Holding the loaded cartridge at the moment of explosion in an open chamber in such manner that the cartridge itself shall form a prolongation or extension of the bore of the gun.

Ninth, So arranging the fluted rollers, F F', that the semi-dlameter of the loaded cartridge lying thereon shall project into the plaue of the tube, B, to prevent the escape of more than one cartridge therefrom at atting.

a time.

Tenth, The lock composed of the hammer, J, mainspring, i, trigger, S, trigger spring, s, and cocking lever, I, arranged substantially in the manner described, in combination with the conveyer, G, for the purpose set forth.

Eleventh, The combination of the conducting tube, H, and fluted rollers, F F', or their equivalent, substantially in the manner and for the purpose described.

Twelfth, The guides, d, in combination with the breech, D, and fluted rollers, F F', or their equivalent, substantially in the manner described, for the purpose set forth.

for the purpose set forth.

1,313.—A. B. Smith, of Clinton, Pa., for an Improvement in Raking Attachments to Harvesters:

I claim the cam, P, constructed, arranged and operating in combination with the spring detents, R, and gaide plate, b, substantially as specified, for the purpose of turning the rake up and down at the termination of its backward and forward movements.

I also claim the combination of the arm, S, and stop, s, for giving the additional forward and downward motion to the rake at the termination of its torward movement with the mechanism for operating the grain or sheaf guard, whereby the gavel is discharged in a compact form, substantially as described.

I also claim the sheaf guard, arranged and operating in combination with the rake, substantially in the manner and for the purpose specified.

I also claim the compressing arms, i i, arranged and acting in com-bination with the rake and sheaf guard, substantially as and for the

purpose specified.

I also claim the combination and arrangement of the cam, L, vibrating lever, K, and arm, M, constructed substantially as described for communicating the required positive motion from the driving shaft to

the sheat guard.

1,314.—H. R. Stover, of Lancaster, Pa., for an Improvement in Secting Machines:

I claim the seed roller, A, having seed cells, c c c, open at one end, and formed by the diagonal partitions, b b b, and flange,d, substantially as and for the purpose set forth.

tially as and for the purpose set forth.

1,315.—Jacob Strayer, of Miamisburg, Ohio, for an Improvement in Seed Drills:
I claim making the teeth on one part or portion of the feeding roller for seed drills opposite the spaces between the teeth on the other part or portion of said roller, substantially as described, so as to deliver or discharge the seed more uniformly.

1,316.—Charles Titterton, of Rohampton, Great Britain, for an Improvement in the Preparation of Oxyd of Zinc for a Paint. Patented in England November 4, 1856:

1856:
I claim the subjecting of oxyd of zinc, when contained in a stron holder, to a great pressure, by hydraulic, screw, or other powerfu presses, as described, whereby the density is greatly increased and it covering powers brought to nearly equal white lead, overcoming great objection hitherto existing to the use of white oxyd of zinc.

1,317.—Robert Watson, of Chatham, Ill., for an Improvement in Permanent Railways:

I claim the employment, in connection with the rails, of wrought iron chairs of the same length as the rails, constructed and arranged in the manner described, so as to form a continuous bed or groove for the reception and support of the rails, all as set forth.

[The object of this invention in permanent railways is to secure a re permanent and durable support for rails known as the reversible which has two rolling tables or surfaces that can be used alternately as one surface wears down.1

1,318.—C. Weitman, of Independence, Iowa, for an Improved Broom:
I claim the tw wire frames, BB, united to or forming a part of screw red, A, and otherwise constructed as described, in combination with the slide, g, the conical cap, C, and screw handle, D, all arranged as and for the purposes set forth.

The object of this invention in brooms is to so construct the parts which confine the wisps of broom corn that any person, although un-skilled in the art of making brooms hitherto used, may take an old, useless broom to pieces, and substitute new wisps of broom corn for

he old ones.]

1,319.—M. G. Wilder, of Meriden, Conn., for an Improvement in Sewing Machines:

I claim the combination of the shaft or stock of the looper with a pitting that rises and descends in directions transverse to the longitudinal movement of the looper, by means of plates fitted with inclined projections, whereby an intermittent lateral movement is imparted to the looper, substantially as set forth.

I also claim the combination of the looper shaft or stock with a pit man operated by a crawk pin, by means of a pin and slotted cam plate, the form of the cam slot being such that the point of the looper, when moving in both directions, is caused to pass by the back of the needle sooner than it would if moved by the crank pin alone, substantially as setforth.

moving in both directions, is caused by the crank pin alone, substantially as setforth.

I also claim the combination of the shaft or stock of the looper with a pitman, by means of blocks or plates fitted with inclined projections, and with a pin and can slot, whereby the before-described longitudinal and lateral movements of the looper are derived from the movement of a pitman operated by a crank pin, substantially as set forth.

I also claim the combination of an eye-pointed looper with a hook at its butt, substantially as set forth.

as sett, substantially as set forth.

1,320.—S. R. Wilmot, of Brooklyn, N. Y., for an Improved Basket for Berries:

I claim a basket for berries constructed of sheet metal strips or plates cut and bent in the form as shown, and used in connection with the plates or disks, B C; all arranged as shown to form a new and improved article of manufacture for the purpose specified.

1,321.—J. N. Wilson, of Mount Bethel, Pa., for an Improved Washing Machine:

I claim the combination of the horizontal, rotating, rubbing wheel, D, and suds box, B, arranged substantially as and for the purpose set forth.

[The object of this invention is to obtain a machine by which full controi may be had over the rubbing action, equally so as if the rubbing were done manually in an ordinary washtub, and thereby prevent the clothes being injured by an undue rubbing, and, at the same time, admit of the work being expeditiously done.]

1,322.—Henry Winter, of Albion Place, Hackney, County of Middlesex, England, for an Improved Machine for Weighing Sacks. Patented in England September 15, 1859:

claim a machine or apparatus of the construction substantially as cribed, and for the purpose set forth.

1,323.—C. B. Wood, of New York City, for an Improvement in Carriages:

I claim the arrangement, in the manner shown and described, of the bar, G, and springs, E, with the springs, F, and carriage body, A, all as set forth.

bar, G, and springs, E, with the springs, F, and carriage body, A, an as set forth.

1,324.—George Wood, of Strasburg, Pa., for an Improved Field Bucket:

I claim the lid, E, with slots, H, in combination with the grooved adjustable bars, F, extending across the upper and lower sides of the lid, for the purposes set forth.

1,325.—J. E. Wootten, of Philadelphia, Pa., for an Improved Hydrostatic Pressure Indicator:

I claim the ram, G, the cylindrical opening, x, in the block, E, and the permanent, self-tightening packing, h, when the said block is of an appropriate shape for forming a communication between the said opening, x, and the space beneath the ram of an hydrostatic press, and when the whole is combined with an clliptical or other suitable spring, the pointer, Q, graduated index plate, D, and the devices described, or their equivalents, for transmitting the motion of the spring to the pointer, substantially in the manner and for the purpose set forth.

1,326.—Limus Yale. Jr., of Philadelphia, Pa., for an Im

1,326.—Linus Yale, Jr., of Philadelphia, Pa., for an Im

1,326.—Linus Yale, Jr., of Philadelphia, Pa., for an Improved Lock:
I claim, first, The piece, E, or its equivalent, used in the manner or an equivalent manner, and for the purpose substantially as described.
Second, The parts, D D D, or their equivalents, deriving motion in the manner substantially as described.
Third, The piece, C, or its equivalent, with its arm, g, for the purpose and object described.
1,327.—Linus Yale, Jr., of Philadelphia, Pa., for an Improvement in Locks:
I claim the application to locks of the parts, E el e2 d and M, or their equivalents, for the purpose and object substantially as described.

I claim the application to locks of the parts, E el e2 d and M, or their equivalents, for the purpose and object substantially as described.

1,328.—James Young, of New York City, for an Improvement in Electro-magnetic Bathing Apparatus:

I claim, first, The combination of a bath tub with non-conducting sides and bottom, with metallic conducting ends, each end attached—the head to the positive, and the foot to the negative pole of a helix, or vice versa, substantially as and for the purpose set forth.

Second, The employment of insulated rockshafts, b, spplied in combination with the supporting rods, a a', and with the tub, A, substantially as described, for the purpose of imparting to the tub an oscillating motion, while, at the same time, its insulation is preserved.

Third, The arrangement of the adjustable metallic plates, i i', in the steam jacket, E, in combination with the electro-magnet, M, as described, for the purpose of supporting certain parts of the body and opassing the current through certain portions of the body of the patient. Fourth, The combination of an electro-magnet, M, bathing tub, A, and metallic vessel, H, with a rose, m, constructed and operating as and for the purpose set forth.

Fifth, Wrapping the sponge, s', round a copper ball, s, as and for the purpose specified.

Sixth, So combining the swinging tub, A, switch, N, and electro-magnet, M, that by the oscillating motions of the tub the current is changed.

Seventh, The combination of the bathing tub, A, electro-magnet, M,

magnet, M, that by the oscillating motions of the tub the current is changed. Seventi, The combination of the bathing tub, A, electro-magnet, M, metal strips, q q', and brakes, r r1 r2 r3 r4 r5 r6, constructed and operating substantially as and for the purpose set forth. Eighth, So arranging the top rail, a*, on the sides of the tub that the same projects over inside and outside, in the manner and for the purpose described.

[This apparatus provides for administering a hot-air or Turkish bath, sulphur vapor bath, steam vapor or Russian bath, medicated herbal-

vapor bath, electro-magnetic bath, or ordinary water bath,]

1,329.—C. R. Alsop, of Middletown, Conn., assignor to J. W. Alsop, of New York City, for an Improvement in Revolving Fire-arms:

I claim, first, Combining the oscillating cam, H, with the cocking lever, so as to be operated by and with the said lever, to permit the backward longitudinal movement of the cylinder, substantially as described

lever, so as to be operated by and the cylinder, substantially as described.

Second, I claim the spring, K, applied and operating in combination with a stud or projection, t, on the side of the oscillating cam, H, to produce the necessary movement of the said cam to give the cylinder the forward longitudinal movement, substantially as set forth. Third, I claim effecting the cocking of the hammer by means of a stud or projection, s, on the side of the oscillating cam, H, substantially asspecified.

Fourth, I claim placing the spring, b, by which the backward longitudinal movement of the cylinder is produced within the axis pin itself, substantially as and for the purpose specified.

Fifth, I claim combining the axis pin, D, with a pin, F, which attaches the rammer shell to the frame, A, by means of the spring, b, the pin, c, and the notch, e, all applied and operating substantially as described.

Sixth, I claim the hanging of the trigger and sere on the axis pin of the cam by which the forward longitudinal movement is produced, substantially as described.

sixui, I caim the manging of the trigger and sere on the axis pin of the cam by which the forward longitudinal movement is produced, substantially as described.

Seventh, I claim the hanging of the cocking lever, J, on the axis pin of the cam by which the forward longitudinal movement of the cylinder is produced, substantially as described.

Eighth, The employment of the same pin, I, as the axis of the cam, H, and the fulcrum of the cocking lever, the trigger and the revolving lever or dog, substantially as specified,

Ninth, Combining the axis pin, I, of the cam by which the forward longitudinal movement of the cylinder is produced, with the movable side plate of the stock, by means of the countersunk hole in the said plate, and the screw, 20, passing through the said plate and screwing into the said pin, substantially as and for the purpose described. Tenth, Making the locking and stop notches, i, i, in the periphery of the rear journal of the rotating cylinder, substantially as described.

[This invention consists in certain improvements in the means of ob taining a longitudinal movement of the many-chambered cylinder, for the purpose of forcing it tightly up against the barrel, to make a tight joint therewith at the time of firing, and of drawing it back out of contacttherewithprevious to its rotary movement. It also consists in certain improvements in the mechanism for effecting the cocking of the er, and the rotation and stoppage of the cylinder, and in the mode of applying the trigger.]

.—Moses Ducharme (assignor to himself and George Ducharme), of Cohoes, N. Y., for an Improvement in locks: in the combination of the latch bolt, A, shackle, B, escutcheon,

Locks:

I claim the combination of the latch bolt, A, shackle, B, escutcheon, C, and spring to mbler and escutcheon spring, D J, all constructed and arranged substantially as shown and specified.

And I also claim the construction of the front plate, E, with notched lugs, y, and the back plate, h, with corresponding slots, z, as and for the purposes set forth.

purposes set forth.

31.—C. H. Leffingwell, of Providence, R. I., assignor to himself and P. B. Carpenter, of North Providence, R. I., for an Improvement in Boot Legs: claim a boot leg constructed of the pieces, A D D F and E, cut in shape represented in the drawings, with the elastic pieces, G G, induced in the manner and for the purposes set forth.

[The object of this invention is to obtain a close, stocking-fitting boot leg which may be cut to fit any sized or shaped leg, and to give ease in outting on a boot, and also to effect a great saving in stock.]

-C. O. Luce (assignor to himself, I. M. Strong and F. Eastbrook), of Brandon, Vt., for an Improved I. F. Eastbrook, Washing Machine:

washing matchine: I claim the arrangement of the racks, j, pinions, i, shaft, E, and rellers, l, with the stems, k, pounders, F, rotary tub, A, shaft, D, and gearing, f g e e B; all as shown and described, for the purposes set forth.

[This invention consists in the arrangement of a tub rotated by means of a toothed ring at its bottom and on its outside, in combina tion with a series of rising and falling pounders arranged in the interior of the tub, and on one side of the same, in such a manner that, by the rotary motion of the tub, the clothes contained in the same are success ively exposed to the action of the pounders.1

1,333.—George Murray (assignor to himself and Sarah H. Hilbert), of Cleveland, Ohio, for an Improvement in Water Elevators:

I claim, first, The circular spout, N N', in combination with the double oblique valves, L L', when the same are constructed, arranged and operated as and for the purpose set forth.

Second, I claim the arrangement of the pulleys, C D, for the purpose of compressing the rope in order to prevent its slipping, as specified.

of compressing one rope in order to prevent its sinpling, as specified.

1,334.—Joseph Neumann (assignor to G. W. Robertson)
of Philadelphia, Pa., for an Improvement in Hydrants
1 claim the case or guard, B, in combination with the upper end o
the barrel of a hydrant cock, the said case or guard being constructed
and applied to the cock, substantially in the manner described and for
the purpose specified.

1,335.—John Range (assignor to J. and E. Parker), of Meriden, Conn., for an Improved Thumb Latch:

I claim the slide bolt, B, attached to a frame or plate, A, and provided with a spring, 4, and the central bow-shaped part having double-beveled surfaces, b b, in connection with the thumb piece, D, and with or without the botton, G, as and for the purpose set forth.

The object of this invention is to obtain a simple and economica thumb latch which may be applied to either a right or left hand door and be capable of being locked or buttoned at the side of the door or which the slide bolt of the latch is placed.

values the since bott of the later is placed.]

1,336.—S. Roberts (assignor to himself and Alfred Adams),
of Cleveland, Ohio, for an Improved Barrel:
I claim the making of the cylinder part of barrels of a volute piece of
pieces, having gore or wedge shaped pieces cut from each end, as de
scribed, for the purpose of forming the proper bulge to the body of the
barrel, in the manner set forth and described.

1,337.—W. D. Wood, of Wilmington, Del., assignor to A. Wood, of Philadelphia, Pa., for an Improvement in the Manufacture of Sheet Iron:

I claim, first, Removing the scales of oxyd of iron from the plate of iron in the manufacture of sheet iron, by annealing it and then passing it successively between corrugated and plain rolls or presses, substantially as described

it successively between corrugated and plain rolls or presses, successively secribed.

Second, The coating of the plates of iron with graphite or plumbago, or other carbonaceous mater, ground in oil prior to the finishing process, in the manner and for the purpose substantially as set for the. Third, The coating of the rolls with graphite or plumbago, or other carbonaceous matter ground in oil, for the purpose of finishing the outer surfaces in the manner described.

outer surfaces in the manner described.

1,338.—L. L. Miller, of Jersey Shore, Pa., for an Improved Washing Machine:
I claim, first, The arrangement of the rubber, E. handle, H, slides, I, studs, b, volute springs, K, and hand lever, J, the whole being constructed, combined and operated in the manner and for the purpose shown and explained.

Second, The combination and arrangement of the boxes, L L, rollers, D D, and tub, A, constructed and applied in the manner and for the purposes shown and explained.

RE-ISSUES.

78.—V. J. Seymour, of Waterbury, Conn., assignor to the Waterbury Brass Company, for an Improvement in Making Brass Kettles. Patented May 13, 1856:

I claim, first, The production of kettles and articles of similar character, by the combined processes of stamping, to produce a preliminary shape and spinning to complete the ultimate or finished form, substantially as described.

shape and spinning to complete the utilinate of minimal trially as described.

Second, I claim the new method or process, substantially as described, of stamping up vessels by a mode of operation in which the bettom is stamped up first and the sides are then formed or drawn in successive lengths by means of dies, substantially as set forth; and this I claim whether the vessel be entirely finished by this new stamping process, or whether it be completed by a spinning process, subsequent theory.

79.-J. R. Robinson, of Boston, Mass., for an Improvement 79.—J. R. Robinson, of Boston, Mass., for an Improvement in Steam Boiler Furnaces. Patented March 5, 1861: I claim, first, The gas-mixing chamber, B, constructed in the rear of the bridge well, C, with a covering arch, F, and openings, d d, in the said arch, substantially as described.

Second, Providing a boiler furnace with one or more trunks, e, or equivalent independent outlets from the fire chamber for the exit or the lighter gases of combustion, substantially as specified.

Third, The combination of one or more trunks, e, with a gas-mixing chamber, B, substantially as specified.

chamber, B, substantially as specified.

80.—John Brayley, of Buffalo, N. Y., administrator, and Mary Pitts, of Buffalo, New York, administratrix, of the estate of John A. Pitts, deceased, late of said Buffalo, for an Improvement in Horse Power. Patented July 4, 1854:

I claim, first, So combining an internal gear main driving wheel with two punions working at diametrically opposite sides thereof, as that the said main wheel may move in a direction transverse to that of a line drawn throughsaid pinions, for the purpose of allowing said main wheel to automatically adjust tiself to said pinions, substantially as and for the purpose set forth.

Second, Hanging the pinions of a double-geared horse power in adjustable bearings, so that they may be set close mesh with the main or master wheel, substantially as described.

Third In so combining the pinions and bevel wheels upon one shaft n pairs, and supporting them in adjustable bearings, as that their

shafts may be kept in a perpendicular position, whilst the two gears are made adjustable to the respective wheels that they mesh with, substantially as described.

EXTENSIONS.

Anson Atwood, of Troy, New York, for an Improvement in Cast Iron Wheels for Railroad Carriages. Patented March 20, 1847; re-issued June 9, 1857:

I claim the connecting of the rim of the wheel with the hub in cast iron car wheels by means of two curved plates, starting from near the ends of the hub and joining at a part of the distance between it and the rim, thus forming a hellow ring or arch around the hub, and joining said ring with the rim by a single plate, or its equivalent, for the uses and purposes set forth.

ans purposes set forth.

Anson Atwood, of Troy, N. Y., for an Improvement in Cast Iron Wheels for Railroad Carriages. Re-issued Sept. 22, 1857:

Iclaim connecting the rim of a wheel cast in one piece with a solid hub by means of a single waved plate, in combination with the dished flanch of Ianches of the hub, forming a ring concentric with the rim of the wheel, substantially as described, whereby the several parts can jet to the unequal contraction in all afrections without serious strain of the metal.

on Atwood, of Troy, N.Y., for an Improvement in Cast Iron Wheels for Railroad Carriages. Re-issued Sept.

Iron Wheels for Kahroan Carry, 1857:

122, 1857:

124 aim a cast iron disk, corrugated in the manner substantially as for the purposes described, when used in connection with the ed rim of a cast iron wheel.

Chicago Ill., for an Improvement in Dies

chilled rim of a cast iron wheel.

P. W. Gates, of Chicago, Ill., for an Improvement in Dies for Cutting Screws. Re-issued May 7, 1847:

I claim the forming of such dies of one solid block, in such manner as that they shall cut a perfect screw by the once passing of it along the piece to be cut, this being effected in the manner set forth, that is to say, by the forming of acute cutting edges on the threads within the dile, which threads are to be regularly reduced in high from the upper to the lower face thereof, at which part the last terminating thread is obliterated, and by the filling away of a large portion of the threads, as shown at B B, and by the curves, e m and I m; the cutting edges being also furnished with throats for the escape of the cuttings, as made known and represented, and the whole apparatus being arranged, combined and operating substantially in the manner and for the purpose set forth.

DESIGN.

Garretson Smith and Henry Brown (assignors to Liebrandt & McDowell); of Philadelphia, Pa., for a Design for Cooking Stoves.

NOTE .- The number of patents issued on the 14th of May, and re ported above, amounts to seventy-one; out of this number, TWENSEVEN were secured through the Scientific American Patent Agency.



- R. W., of N. Y .- The centrifugal gun of Robert McCarty, of this city, which has recently been brought prominently before the public, was patented on the 1st of December, 1838. The patent has therefore expired. D. J. Martin, of Louisville, Ky., obtained a patent for an improvement on this gun on the 3d of August, 1840.
- O. C. K., of Conn.-Bronzing powders are mostly made in Germany, from compositions of tim. You may use themmixed with any varnish, then burnish them when dry, or you may put on the varnish first, and dust the powder on the top.
- C. O. G., of Wis.-You can make your floor perfectly water-tight by placing a cement in the same, composed of white lead and pounded glass. Or, if you cannot obtain pounded glass, use dry-slaked lime as a substitute. It must be allowed to dry perfectly before you use water to washit. The cement should be applied about the consistency of putty.
- J. M. H., of N. Y.—A very good cement for fastening glass standards into wooden frames is composed of a strong solution of glue and plaster-of-paris, or fine chalk. Dissolve the glue in water, then add the plaster until the composition is of the proper thickness. Apply this cement quickly, as it dries rapidly.
- H.S., of Mass.-In our description of firing with Hotchkiss' shot, wherein it is stated that the iron cannon used was 21/2 inches bore and 4 inches long, there is a misprint. It should have been 4/eetlong.

 J. A., of Ill.—Puddled steel is allowed to be at least twice
- as strong as east iron. We know not where you can obtain eastings of this metal, varying from five to twenty-five pounds in weight. In all likelihood you can obtain malleable iron castings of all sizes in Chi-
- cago. W. de S., of Pa.—Address the Secretary of the Navy for a e Report of Naval Engin
- T. McEl. H., of Wis .- A metal roof, if put on properly, is certainly better than one of cement. A good cement roof, however, is made by taking equal quantities of tar and asphalt, boiling them together for one hour at least, then stir in some perfectly dry, sifted ne until it becomes of the proper thickness. felt or thick tar paper, and cover the whole with dry sand and fine gravel. Lay it on in successive coats of about three square yards at once, and beat the gravel on the top with a shovel.

 W. J., of Cal.—On page 275, Vol. X. (old series), of the
- Scientific American, you will find a recipe for destroying red ants.

 Take a large sponge, wet it, then squeeze out the water, and sprinkle some powdered sugar over it so as to fill the pores. Now place it in the vicinity of the ants' nests, and in a short period it will be filled with the insects, when it should be lifted and plunged into a vessel of boiling water. Pursue this system persistently, and you will ultimately rid your premises of these pests.
- L. K., of Pa .- A preparation of india-rubber and cork, called "kamptulicon," was experimented with as a protective coating for iron ships in 1850. You will find a brief description of these experiments on page 62, Vol. VI. (old series), of the Scientific Ameri-
- H. S., of Mass .- A 12-pound rifled cannon shot measures 314 inches in diameter at the base, and is conical shaped
- W. W. B., of Pa.—We have received a great many communications on the subject of aerostation, but have published only those which we supposed would interest our readers. We wroteyou a long time ago that we should probably not publish your c
- H. C., of N. Y.—When we find some definite and authentic intelligence in regard to the gold of Nova Scotia we shall publish it.

- J. E. B., of Ohio.—The best pale varnish for carriages is made by mixing 234 gallons of hot boiled linseed oil with 8 pounds of pale African copal gum fused in an iron vessel. About 34 pound of sulphate of zinc should be added slowly to the mixture, and the whole boiled until it becomes stringy. It is next thinned down with turpentine, foruse. This varnish dries in about 4 hours in summer, and is used for the outside work. It is durable and quick-drying.
- G. E. S., of Ill .- Mr. Fairbairn, of England, is the author of a work on iron bridges. You could obtain it through some importing house, such as J. Wiley, or Ballière Bros., this city.
- E. L., of Pa.—The experiments of Mr. Charles H. Haswell, of this city, have shown that the dynamical effect of a falling body is equal to its weight multiplied by its velocity in feet per second and by 4.426. A weight falling 80 feet would have a velocity, in round numbers, of 72 feet per second, and if its weight were 3,000pounds, it would compress a spiral spring to the same extent as a
- weight of \$54,000 pounds resting upon it.

 H. G. G., of N. Y.—Carbonic acid gas is heavier than atmospheric air, still it does not fall and occupy the lowest stratum of the atmosphere, owing to a singular property which gases have of mixing together. When two gases of different densities are placed in the same vessel, though the heavier one be at the bottom, it is found that they gradually mingle completely together, forming a homogeneous mixture. The particles of gas are so far apart that they do not prevent another gas from ultimately occupying the same room, but they do obstruct the entrance of the second gas into the same space, rendering it more slow.
- D. H. S., of Conn.-D. Appleton & Co., of this city, published a work on mechanical drawing, a fewyearsago.
- M. K., of Ill.—To practise drilling an artillery company of volunteers, if you are going to use heavy cannon-say 24-poundersthey can be cast of iron; any foundry can do it. But if the company is to be of flying artillery, you want brass 6-pounders. These are expensive, but as the metal would always be valuable, the expense would be little more than the interest on their cost. Dahlgren guns are very heavy for stationary batteries, and are unsuited for field perations.
- C. H. G., of Vt .- We believe that Wesson has ceased to manufacture rifles, but the same style of gun is made under the
- Clark patent by James, of Utica.

 A. B. W., of N. Y.—The proportion of the feed pump or cylinder of an air engine to the working cylinder will depend on the temperature at which the air is used. Atmospheric air, like other gases, expands 1.493 of its bulk at 35° for each degree that its temperature is raised; that is, it takes an increase of 493° to double its
- E. F., of Wis .- A process has been patented by A. Steers. of this city, for extracting the tannin from bark, whereby it is obtained in a very concentrated form for tanning leather. We have been informed that the extract retains all the qualities of the bark for tan-
- J. P. & L. S., of Ind. There can be no lime in the steam which you employ for heating your dyestuff's, and you should not blame the steam for the bail colors in your dye house.

Money Received

At the Scientific American Office on account of Patent Office business, during one week preceding Wednesday, May 29,

B. & R., of Ohio, \$15; M. D. W., of Ind., \$25; A. & H., of Cal., \$25; E. L. E., of Conn., \$15; A. & C., of N. Y., \$400; V. P., of N. Y., \$15; S. M. R., of Mass., \$15; L. & P., of Pa., \$31; J. O. F., of Mass., \$25; J. A., of Pa., \$25; D. P. F., of Mass., \$25; E. D. W., of Pa. \$43; L. D. B., of N. Y., \$20; A. C., of N. H., \$20; E. C. W., of N. J., \$43; L. D. B., of N. Y., \$20; A. C., of N. H., \$20; E. C. W., of N. J., \$43; H. L. B., of Conn., \$20; H. W. H., of Conn., \$20; W. B. S., of N. Y., \$25; A. W., of Vt., \$25; A. S., of N. Y., \$30; R. McC., of N. Y., \$25; F. N., of Conn., \$30; E. A. K., of Conn., \$15; D. E. T., of N. Y., \$15; J. C., of Pa., \$25; W. D., of Mo., \$10; L. & W., of Mass., \$25; W. & M., of N. H., \$40; C. Van N., of N. Y., \$20; W. J. S., of N. Y., \$22; N. C. P., of N. H., \$20; S. A. B., of Conn., \$20; W. S. K., of Conn., 8. C. 1., of P. A. 1., \$20, S. A. B., of Conn., \$20, W. S. R., of Conn., \$20; G. L. K., of Pa., \$15; M. W. M., of N. Y., \$15; M. A. D., of Mich., \$12; U. B. V., of Pa., \$25; W. N. D., of Cal., \$35; A. H. T., of N. J., \$40; D. McK., of N. Y., \$15; J. W. C., of Mich., \$30; L. D. G., of N. J., \$20; T. S. & T. W. R., of N. Y., \$25; A. C., of Mass., \$10; A. M. H., of Conn., \$20; J. R. R., of Mass., \$40; E. F. H., of N. Y., \$20; J. S. P., of Conn., \$20; D. B. S., of Mass., \$22.

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