

FOREIGN SUMMARY—NEWS AND MARKETS.

At a recent meeting of the Manchester (England) Philosophical Society, Dr. F. Grace Calvert, the eminent chemist, read a paper on researches on several organic coloring matters, in which light was demonstrated to play a wonderful and important part in changing and producing colors with various substances. Thus, the solution of a wood in England called "purple-heart" is perfectly colorless, and if exposed in a dark place to the air for several days, it will remain unchanged, but if placed in a glass vessel, hermetically sealed, and then exposed to light, it assumes a purple color. Heat also appears to have a peculiar effect in producing the color, for when a small quantity of hydrochloric acid was mixed with the clear solution of the purple-heart, it remained colorless, but when heated to about 154° Fah., it acquired a purple hue, and when heated to 276° Fah., in the dark, without being mixed with an acid, it also became a deep purple. Woolen, silk and cotton goods, when steeped in a decoction of this wood, were simply colored a light grey, but when exposed to the light and a bath of acidulated water, they were at once dyed a purple. The color withstands the action of acids and is more durable on silks than purples dyed with archil. These researches open up a new field for practical chemists connected with the ornamental arts of coloring. There are, perhaps, many of the common woods in our forests the solutions of which may be capable of coloring purple and other shades. The practical part of chemistry, relating to topical coloring and dyeing of fibrous materials, is exceedingly intricate, and from present chemical knowledge, general laws for the production of organic coloring matters cannot be laid down.

At the above-mentioned meeting a paper was read by Dr. R. A. Smith on the cause of color and the theory of light. He had made a great number of experiments which proved the undulating hypothesis of light to be correct, and which explained many of the mysteries connected with polarization and prismatic refraction. It is believed by men of science that there is a subtle ether pervading space, and that light is caused by its vibrations, and that the different colors of the spectrum are produced by the number of vibrations in a given time in certain media. Dr. Smith's experiments resulted in his concluding that there were greater intervals between the undulations than Newton had demonstrated or scientific men believed. He had made certain contrivances so as to produce light and shade in alternate vibrations, and by thus causing pulsations of white light and of shadow alternately, he produced various colors. If we suppose white light to consist of the motion of an ether, and darkness an entire absence of motion in the other, then a certain color—red, blue or yellow—will be developed by the alternate action of light and shadow. By taking a piece of white card-board cut in the form of a parallelogram and made to revolve over a black surface with a rapidity considered equal to the vibration of light, a deep blue was produced; with a different velocity a purple was the result. By painting a disk with several rings of black and white alternately, and then revolving it rapidly, the black and white disappeared and the rings became colored. The whole of the colors of the rainbow could thus be produced by simple white light and shadow, alternating with great rapidity.

A very large steam hammer has lately been constructed at Leeds for a railway company in Australia, and it embraces an improved feature for rapid working. The general method of constructing steam hammers has been to raise the hammer by the steam power and allow it to drop by gravity. Of course this principle of action is unsuited to rapid working. This new hammer is constructed upon both the single and double-acting principle; it is not only lifted by the pressure of steam from below, but the natural effect of gravity from the falling of the hammer is assisted by pressure of steam from above. A blow of extraordinary force and rapidity is thus produced, which is of great advantage in forging when a considerable number of blows are necessary, the work being finished at one heat, thus saving both time and fuel. The length of stroke and force of blow can be regulated at the will of the operator, so as to produce blows equal to 16 tons or a few pounds.

A correspondent of the London Times states that, on examining the inside of some iron vessels at Portsmouth, which had become leaky, it was found that the

whole of the rivet heads, wherever the wash of the bilge-water reached, had been worn off as cleanly as if cut with a chisel. This had led to the use of a cement for covering the heads of the rivets so as to prevent the water acting upon them. When the rivet heads of iron vessels are not protected inside from bilge-water and grit they are soon worn off. One of the navy troop-ships, called the *Megera*, with an iron hull, has lately returned from abroad and is lying at Portsmouth. Her rivets were not protected by cement, and, as a consequence, thousands of them can now be knocked out of her bottom from the inside, with a common punch. This is very important information for the builders and owners of iron ships.

The English are beginning to use decimal measures. Rules are now made with the old 12-inch measure on the one side, and on the other with 10 inches, corresponding to the old foot. Thus a 20-inch rule is equal to the old 2-foot rule. The term "inch" is retained, that of "foot" abolished.

New York Markets.

CANDLES.—Sperm, city, 33c. a 40c. per lb.; sperm, patent, 50c.; wax, paraffine, 50c.; adamantine, city, 18½c. a 21c.; stearic, 27 a 28c.  
 COAL.—Anthracite, \$4.50; Liverpool orrel, \$10; cannel, \$12.  
 COPPER.—Refined ingots, 22½c. a 23c. per lb.; sheathing, 26c.; Taunton yellow metal, 20c.  
 CORDAGE.—Manilla, American made, 8½c. per lb.; Rope, Russia hemp, 12c.  
 COTTON.—Ordinary, 8½c. a 8¾c.; good ordinary, 9½c. a 10c.; middling, 11½c. a 11¾c.; good middling, 11¾c. a 12½c.; middling fair, 12½c. a 13½c.  
 DOMESTIC GOODS.—Shirtings, bleached, 26 a 32 inch per yard, 6c. a 8c.; shirtings, brown, 30 inch per yard, 6c. a 7½c.; shirtings, bleached, 30 a 34 inch per yard, 7c. a 8½c.; sheetings, brown, 36 a 37 inch per yard 5½c. a 8½c.; sheetings bleached, 36 inch per yard, 7½c. a 15c.; calicoes, 6c. a 11c.; drillings, bleached, 30 inch per yard 8½c. a 10c.; cloths, all wool, \$1.50 a \$2.50; cloths, cotton warp, 85c. a \$1.37; cassimeres, 85c. a \$1.37½; satinets, 30c. a 60c.; flannels, 15c. a 30c.; Canton flannels, brown, 8½c. a 13c.  
 DYEWOODS.—Duty free. Fustic, \$18 a \$38, according to quality; Logwood, Laguna, \$24; Jamaica, \$12, Lima wood, \$65 a \$75; Sapan wood, \$45; Bar wood, \$32 a \$24.  
 FLOUR.—State, superfine brands, \$5.10 a \$5.20; Ohio common brands, \$5.30 a \$5.40; Ohio, fancy brands, \$5.50 a \$5.60; Michigan, Indiana, Wisconsin, &c., \$5.40 a \$5.60; Genesee, extra brands, \$5.75 a \$7.50; Missouri, \$5.35 a \$7.50; Canada, \$5.50 a \$6.35; Richmond City, \$6.50 a \$7.25; Baltimore (Howard-street), \$5.50 a \$6.25; rye flour, fine, \$3.75 a \$3.90; corn meal, \$4.  
 HEMP.—American undressed, \$140 a \$150; dressed, from \$160 a \$200. Jute, \$87 a \$90. Italian, \$375. Russian clean, \$190 a \$200 per ton. Manilla, 6½c. per lb. Sisal, 5½c.  
 INDIA-RUBBER.—Para, fine, 62½c. per lb.; East India, 50c. a 52c.  
 INDIGO.—Bengal, \$1 a \$1.55 per lb. Madras, 75c. a 95c.; Manilla, 60c. a \$1.15; Guatemala, \$1 a \$1.25.  
 IRON.—Pig, Scotch, per ton, \$23.50 a \$34; Bar, Swedes, ordinary sizes, \$37 \$30; Bar, English, common, \$42.50 a \$43; Sheet, Russia, 1st quality, per lb., 11½c. a 11¾c.; Sheet, English, single, double and treble, 3½c. a 3¾c.; Anthracite pig, \$24 per ton.  
 IVORY.—Per lb., \$1.25 a \$1.90.  
 LATHS.—Eastern, per M., \$2.50.  
 LEAD.—Galena, \$5.80 per 100 lbs.; German and English refined, \$5.65; bar, sheet and pipe, 5½c. a 6c. per lb.  
 LEATHER.—Oak slaughter, light, 31c. a 33c. per lb.; Oak, medium, 31c. a 33c.; Oak, heavy, 30c. a 31c.; Oak, Ohio 29c. a 30c.; Hemlock, heavy, California, 20½c. a 21½c.; Hemlock, buff, 15c. a 18c.; Cordovan, 50c. a 60c.; Morocco, per dozen, \$18 to \$20; Patent enameled, 15c. a 17c. per foot, light Sheep, morocco finish, \$7.50 a \$8.50 per dozen; Calfskins, oak, 57c. a 60c.; Hemlock, 56c. a 60c.; Belted, oak, 32c. a 34c.; Hemlock, 28c. a 31c.  
 LIME.—Rockland, 80c. per bbl.  
 LUMBER.—Timber, white pine, per M feet, \$17.50; yellow pine, \$35 a \$36; oak, \$18 a \$23; eastern pine and spruce, \$13 a \$15 White Pine, clear, \$35 a \$40; White Pine, select, \$25 a \$30; White Pine, box, \$14 a \$18; White Pine, flooring, 1½ inch dressed, tongued and grooved, \$24.50 a \$25; Yellow Pine, flooring, 1½ inch, dressed, tongued and grooved, \$29 a \$32; White Pine, Albany boards, dressed, tongued and grooved, \$20 a \$21; Black Walnut, good, \$45; Black Walnut, 2d quality, \$30; Cherry, good, \$45; White Wood, chair plank, \$45; White Wood, 1 inch, \$23 a \$25; Spruce Flooring, 1½ inch, dressed, tongued and grooved, each, 22c. a 24c.; Spruce Boards, 15c. a 17c.; Hemlock Boards, 12½c. a 14c.; Hemlock wall strips, 10c. a 11c.; Shingles, cedar, per M, \$28 a \$35; Shingles, cypress, \$12 a \$25; Staves, W. O. pipe, light, \$35 a \$55; Staves, white oak, pipe, heavy, \$75 a \$80; Staves, white oak, pipe, culls, \$30 a \$35; Staves, do. hhd., heavy, \$70; Staves, do. bbl. light, \$30 a \$35; Staves, do. bbl. culls, \$20; Mahogany—Duty, 8 per cent. ad. val.—St. Domingo, fine crochets, per foot, 35c. a 45c.; St. Domingo, ordinary do., 20c. a 25c.; Honduras, fine, 12½c. a 15c.; Mexican, 13c. a 15c.  
 NAILS.—Cut at 3½c. a 9¾c. per lb. American clinch sell in lots, as wanted, at 5c. a 5½c.; wrought foreign, 3½c. a 3¾c.; American horse-shoe, 14½c.  
 OILS.—Linseed, city made, 56c. per gallon; linseed, English, 56c.; whale, bleached winter, 59c. a 60c.; whale, bleached Fall, 58c.; sperm, crude, \$1.38; sperm, unbleached winter, \$1.45; coal oil, \$1; lard oil, No. 1 winter, 87c. a 92c.; refined rosin, 20c. a 40c.; camphine, 45c. a 47c.; fluid, 53c. a 55c.  
 PAINTS.—Litharge, American, 7c. per lb.; lead, red, American, 7c.; lead, white, American, pure, in oil, 8c.; lead, white, American, pure, dry, 7½c.; zinc, white, American, dry, No. 1, 5c.; zinc, white, French, dry, 7½c.; zinc, white, French, in oil, 9½c.; ochre, ground in oil, 4c. a 6c.; Spanish brown, ground in oil, 4c.; Paris white, American, 75c. a 90c. per 100 lbs.; vermilion, Chinese, \$1.12½ a \$1.22; Venetian red, N. C., \$1.75 a \$2.25 per cwt.; chalk, cash, \$4 per ton.  
 PLASTER-OF-PARIS.—Blue Nova Scotia, \$2.75 a \$2.87½ per ton; white Nova Scotia, \$3; calcined, \$1.20 per bbl.  
 RESIN.—Common, \$1.50; per 310 lbs.; strained, No. 2, &c., \$1.50

a \$1.87; No. 1, per 280 lbs. \$2 a \$3; white, \$3 a \$4; pale, \$4.50 a \$5.50.  
 SHELTER plates, 5c. a 5½c. per lb.  
 STEEL.—English cast, 14c. a 16c. per lb.; German, 7c. a 10c.; American spring, 5c. a 5½c.; American blister, 4½c. a 5½c.  
 STYAC.—Sicily, \$65 a \$80 per tun.  
 TALLOW.—American prime, 10½c. per lb.  
 TIN.—Banca, 30c. a 30½c.; Straits, 30c.; plates, \$6.37 a \$9.50 per box.  
 TURPENTINE.—Crude, \$3.50, per 280 lbs.; spirits, turpentine, 4½c. per gallon.  
 WOOL.—American, Saxony fleeces, 55c. a 60c. per lb.; American full blood merino, 48c. a 52c.; extra, pulled, 45c. a 50c.; superfine, pulled, 39c. a 43c.; California, fine, unwashed, 24c. a 32c.; California, common, unwashed, 10c. a 12c.; Mexican, unwashed, 11c. a 14c.  
 ZINC.—Sheets, 7½c. a 7¾c. per lb.  
 The foregoing rates indicate the state of the New York markets up to December 1st.

Flour has advanced; tin and resin retreated. On the whole, however, the prices have been very steady.

The boot and shoe market is dull and leather inactive. The north and north west regions produce the most leather. During the past week 44,567 sides arrived in the city, of which 25,347 came down the Hudson river. We have noticed considerable quantities of catechu received lately by those engaged in furnishing tanning materials. This East Indian astringent gum is coming into more general use for making leather.

WEEKLY SUMMARY OF INVENTIONS.

The following inventions are among the most useful improvements patented this week. For the claims to these inventions the reader is referred to the official list on another page:—

MUSIC WIRE.

This invention consists in the employment for the strings of piano-fortes and other stringed instruments, of hardened and tempered steel wire, such wire being less brittle and having greater tenaciousness of sound and producing more brilliant tones in the vibrations than the steel music wire heretofore used, which has always been made hard by repeated drawing in a cold state without annealing. J. B. Thompson, of Philadelphia, Pa., is the inventor.

VALVE GEAR.

This invention relates to the direct application of steam to operate the valves of steam engines, and is more especially intended for use in beam engines or other engines with upright cylinders having puppet valves, but it may be applied to any engine whose valves have a vertical motion. It consists in a novel mode of applying an auxiliary steam cylinder and piston in combination with the valves of the main engine, to effect a quick opening and control the closing of said valves. It also consists in the employment of the same steam in such auxiliary cylinder, first to open the valves of the main engine, and afterwards to check and render gradual the fall or descent thereof. And it further consists in certain means of retaining the eduction valves of the main engine in an open condition after the cut-off takes place. The inventor of this device is Peter Louis, of this city.

PIANO-FORTE.

H. Steinway, Jr., of this city, has an important improvement in pianofortes, the object of which is to permit the use of "agraffs" for the tuning-block bearings of the treble strings, and yet to permit the said strings to be struck as close as is desirable to those bearings. The invention consists in the construction of the cast-iron plate which covers or partly covers the tuning-block, with a projection on its under side, to lap over the edge of and abut against the said block; and in screwing the agraffs down from the upper surface of the said plate into the said projection.

BASIN FOR WATER-CLOSETS.

The object of this invention is to effect a more thorough cleaning of the basin after use than has been hitherto done. The invention consists in constructing the upper part of the basin with an annular chamber which gradually decreases in diameter from its orifice to its opposite end, and is so placed relatively to the body of the basin as to cause the water admitted into it to pass down all around the inner side of the basin in a spiral sheet, and thoroughly wash the same. The inventor of this device is Wm. Boch, Senr., of Greenpoint, N. Y.

OFFSET BOXES IN SAWMILL CARRIAGES.

Offset boxes are used on sawmill carriages so that as the carriage is giggered back it shall be thrown from the saw laterally, and thus avoid marring the face of the lumber by the teeth of the saw coming in contact with the same, and also avoid heating the saw. The im-

provement consists in a peculiar manner of casting or constructing a pair of offset boxes together on a common bed-plate, so as to avoid a difficulty which has always been experienced in the use of such boxes. The difficulty alluded to is this:—A pair of ordinary offset boxes, owing to being made separate from each other, spread apart, and it is difficult to keep them in line relatively to each other and from spreading apart and thus becoming useless for the purpose intended; but by casting them together on a common bed-plate which has an opening through it to admit the friction-wheel, they have no chance of play independently of each other, and therefore the difficulty is obviated. Wm. M. Ferry, Jr., of Ferrysburgh, Mich., is the inventor.

#### CAR TRUCK.

The object of this invention is to bring the weight of the car body or cause the same to bear directly over the journal boxes of the axles, and at the same time employ a swinging cross-beam so as to admit of a certain degree of lateral play or movement of the car body independently of the truck, whereby an uneven wear of the journals of the axles is prevented; an easy, yielding capacity given the car, both laterally and vertically, while in motion; and much wear and tear avoided generally in the running-gear and parts intimately connected therewith. The credit of this contrivance is due to F. I. Palmer, of Knoxville, Tenn.

#### PLANING ATTACHMENT FOR SHINGLE MACHINES.

This invention is to be attached to that class of shingle machines in which a circular saw and reciprocating bolt-carriage are used. The object of the invention is to obtain a planing device that will operate automatically by the movement of the bolt-carriage, and perform the desired work, to wit, the planing of the face side of the shingles as they are sawed from the bolt, without any additional aid or attendance in the manipulation of the machine to which the invention is applied. This improvement was designed by J. E. Sturdy, of Augusta, Maine.



ISSUED FROM THE UNITED STATES PATENT OFFICE  
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\* Pamphlets giving full particulars of the mode of applying for patents, size of model required, and much other information useful to inventors, may be had gratis by addressing MUNN & CO., Publishers of the SCIENTIFIC AMERICAN, New York.

26,239.—Reuben L. Allen, of Providence, R. I., for an Improvement in Sleeve-fasteners:

I claim the new article of manufacture described, namely, a sleeve fastening, composed of the spring, A, cylindrical arms, B, C, hinge and catch, b, c, and hooked bar, D, arranged in the relations and so as to operate together, in the manner set forth.

26,240.—Seth A. Andrus, of Roscoe, Ill., for an Improved Washing-machine:

I claim, first, The combination of the circular plate or crank, I, with the rubber, J, as described, and so constructed and arranged that, by operating the said crank, I am enabled to communicate to the said rubber, J, two motions at the same time—that is, a vertical reciprocating motion and a lateral vibratory motion.

Second, The combination of the casters-rollers, m, m', with the double spring, K, constructed and arranged, in connection with the rubber, J, as before more fully set forth, and for the purposes stated.

26,241.—Evans Backus, of Stuyvesant, N. Y., for an Improvement in Cooking-ranges:

I claim attaching to a stove or range the curved plate, I, and the movable plate, n, and the continuous flue, F, when arranged in the manner and for the purposes set forth.

26,242.—G. W. Beers, of Bridgeport, Conn., for an Improvement in Making Hub Bands for Wagon Wheels:

I claim casting slits or holes through the bands sufficiently large to allow the solder, or other suitable metal used in connecting the cap to the band, to flow through them and unite them, as described, or in any other form or way equivalent thereto.

26,243.—Wm. Boch, Senr., of Green Point, N. Y., for an Improved Water-closet Basin:

I claim, as an improved article of manufacture, a water-closet basin, having a covered annular water passage, B, at its upper edge, as shown and described.

26,244.—Henry F. Bond, of Hudson, Wis., for an Improved Machine for Registering Music:

I claim, first, The application of the bell-pull action with knees and wires to act upon the markers, substantially as described.

Second, The arrangement of the lever, J J J and K K K, by which the sharps are marked with double lines on the spaces or lines in music, with their corresponding naturals, the levers or markers, K K K, being made each of two pieces of tin, or other metal, and the levers or markers, J J J, playing between those two pieces.

Third, The arrangement of levers or markers, of both kinds, in a

row, with proper intervals to record the music or paper ruled, substantially as represented in Fig. 6, the staves of music being ruled of one color, with just leger lines enough of another color to write directly up or down from one staff to another, the leger lines between the two staves belonging alike to both of them, and the whole number of lines and spaces being equal to the compass of the instruments.

Fourth, Application of the ink or coloring matter to the cylinder, A, as described, and the producing of colored marks by pressing the paper against the inked cylinder.

Fifth, The action of the lever, E, upon the bar-marker, L, substantially after the manner set forth.

Sixth, The mode in which the loud pedal action is marked, substantially as set forth.

26,245.—S. L. Bond, of Greenwood, S. C., for an Improved Hub-boring Machine:

I claim the V-shaped bars or jaws, F H, in combination with the bit arbor, D, when the whole are arranged substantially as shown, to operate as and for the purpose set forth.

[This invention consists in the combination of an auger or bit and a centering device, so arranged that hubs may be expeditiously and accurately centered and bored for the purpose of receiving their boxes.]

26,246.—James A. Boughton, of Poughkeepsie, N. Y., for an Improvement in Making Hub-bands for Wagon Wheels:

I claim the combination of the flange, C, and projection, D, on the leaf, B, and the set screw, E, in the open band, A, or their equivalent, for the purposes set forth.

26,247.—John Calvin Brown, of Providence, R. I., for an Improvement in Machines for Making Chain:

I claim the circular disk, I, provided with the wedge-formed projections, E F G H, arranged as described, in combination with the bell crank levers, D D', which operate the several bending instruments, such combination operating in the manner substantially as described for the purposes specified.

26,248.—Peter Brown, of Brooklyn, N. Y., for an Improvement in Paint Cans:

I claim, first, The employment of a strengthening wire within the head, a, as and for the purpose shown and described.

Second, The combination of the pivoted ears, C, with the cover, B, lug, b, and can, A, as and for the purpose shown and described.

[This can is so constructed that its cover can be fastened down by means of metal strips fastened to the sides of the can, and that the handle can be turned down close to the side of the can so that a number of these cans can be packed up closely, and that each can, when unpacked, can conveniently be carried from place to place.]

26,249.—T. S. Brown, of New York City, for an Improvement in Quartz-crushers:

I claim the employment or use of the tubular pestle, C, having a reciprocating and rotating movement, in connection with the nipple or cone, e, in the box or mortar, D, substantially as and for the purpose set forth.

[This invention relates to an improvement in that class of crushing-machines in which pestles are used for performing the work. The object of the invention is to prevent the pestles wearing uneven by an effect due to the flow of the pulp through the mortar or box in which the pestles work. The invention consists in a peculiar construction of the pestles and employing therewith nipples or cones, whereby the desired end is attained.]

26,250.—John Brubaker and Henry Brubaker, of Lancaster county, Pa., for an Improvement in Tools for Handling Tire:

We claim the rod-handled tong, Fig. 2, with its sliding leg, C, hooked end, a, in combination with the ring, E, Fig. 3, when made substantially as described for the purpose specified.

26,251.—John P. Burnham, of Rockford, Ill., for an Improvement in Harvesters:

I claim the employment of a spring, d, in combination with the lever, J, and connecting rod, L, substantially as and for the purpose shown and described.

[This invention relates to an improvement in that class of mechanism employed for driving reciprocating sickles, in which a cam driving-wheel is used in connection with a lever, arranged in such relation with the cam as to be vibrated by it and impart the proper movement to the sickle. The invention also relates to a novel raking attachment for raking the cut grain from the platform. The object of the invention is to obtain a simple device for performing the desired work, and to guard against accidents which frequently occur in consequence of the sickle being suddenly obstructed in its movement.]

26,252.—Ze Butt, of Lincolnton, N. C., for an Improved Harness Yoke:

I claim the manner described of constructing and arranging the yoke, so that its weight, or the greater portion of it, may rest upon the back instead of the neck of the horses.

I also claim, in combination with the yoke, giving a wide base to the line of draft, either by the bolt and clevis or any other equivalent device, for the purpose and in the manner set forth and described.

26,253.—Andrew J. Chapman, of Scipio, N. Y., for an Improvement in Vegetable-cutters:

I claim the arrangement and combination of the hinged guard or feed-board, hinged follower and stationary slatted cutting-bed, when constructed and operating substantially in the manner and for the purposes set forth.

26,254.—Wm. B. Coates, of Philadelphia, Pa., for an Improved Potato-parer:

I claim the handle, A, ferrules, B and C, guard, D, and blade, G, the whole being arranged and constructed substantially in the manner and for the purposes set forth.

26,255.—Seth L. Cole, of Burlington, Vt., for an Improvement in Gas-burners:

I claim the construction, from some good conducting material, as set forth, of a gas-burner, with an enlargement of the tube at the point where the gas is discharged and burned in the form of a globe, or the like, furnished with a slot aperture, as described, so that the gas shall be heated to the utmost at the point where it is consumed.

26,256.—John Webster Cochran, of New York City, for an Improvement in Breech-loading and other Firearms:

I claim, first, So constructing and applying one or more accelerating chambers, in combination with the plunger or elastic cushion, that the charge or charges in the accelerating chamber or chambers are fired by the driving back of the plunger or cushion, and that the plunger or cushion serves as a safety valve to the accelerating chamber, substantially as described.

Second, Combining the movable breech-piece, B, containing the plunger or elastic cushion, with a ring or circular frame, E, hinged to a slide, F, which works longitudinally to the gun, the whole operating substantially as described.

Third, In combination with the breech-piece, B, secured in place by a screw, or its equivalent, I claim the adjustable screwed bursting, G, applied to the gun, substantially as and for the purpose described.

Fourth, The combination of the plunger, C, accelerating chamber, e, c, volute spring, D, movable breech-piece, B, ring or frame, E, and

slide, F, the several parts constructed and applied to the gun, and operating substantially as described.

[This invention, though it may be wholly or in part applicable to ordnance and small arms of all kinds either breech-loading or muzzle-loading, is more particularly designed for breech-loading ordnance. The nature of the invention consists in a certain construction of, and mode of applying the breech, and mode of combining therewith a spring or elastic cushion, which yields to the force so suddenly developed by the explosion of the charge, by which the following results are produced, viz.: 1st, The projectile is started gently, and the great strain that is produced in the chamber of a gun with a rigid breech before and during the starting of the projectile is obviated, and recoil is in a great measure prevented; 2d, A more perfect combustion of the powder is effected; 3d, Provision is made for lubricating the chamber, breech and bore of the gun; and 4th, One or more accelerating chambers are provided to contain charges of powder for the purpose of giving additional impetus to the ball after it has fairly started.]

26,257.—George Cooper, of Concord, N. H., for an Improved Cooking-range:

I claim the combination and arrangement of the separate leading flues, A B C (each provided with a damper, a b c, arranged in it as explained), with flues, D E F G H, disposed around the oven, as specified.

And in combination therewith, I claim the separate insulating flues, I K, arranged between the ovens and on opposite sides of the leading flue, A, and made to open into the bottom flues, D and G, and to communicate with the flue, A, by openings provided with dampers, all as specified.

26,258.—P. Davey, of Ironton, Ohio, for an Improvement in Buttons:

I claim the construction of the double flanged shank-piece as the basis of the button, forming on one end thereof a button and on the other a fastening, and in the middle two flange guards, to receive the button hole and protect it from too much abrasion and friction, substantially as set forth.

26,259.—A. A. Dickson, of Anderson, S. C., for an Improvement in Plows:

I claim the arrangement of the peculiar shaped bar, D, with the shares, E F and G, beam, A, and handles, C, C, substantially as described for the purpose set forth.

[This invention consists in an improved mode of constructing the plow, whereby the same is rendered extremely simple and durable, and capable of being adapted for various kinds of work.]

26,260.—Patrick H. Duffy, of Somerset, Ohio, for an Improved Detective Register for Watchmen:

I claim dropping the balls, by which the action of the apparatus is indicated, into the cells of a revolving wheel, by operating a rod, O, and slide, Q, substantially in the manner and for the purpose described.

I also claim locking and releasing the rod, O, by devices, substantially as described, whereby it can be pulled at certain times only to drop a ball into the cells of a revolving wheel, when constructed and operated substantially in the manner and for the purpose set forth.

26,261.—Henry Ehrenfeld, of New York City, for an Improved Machine for Converting Reciprocating into Intermittent Rotary Motion:

I claim the plate, B, or its equivalent, arranged with a socket, c, and cut or split through its center, as described, to operate in combination with the wheel, A, and lever, C, which latter is furnished with an oblong pin, d, or its equivalent, substantially in the manner and for the purpose specified.

[This device is particularly intended to give motion to the feed-wheel of a sewing-machine, and it is so arranged that it never fails to impart the required motion to the feed-wheel in one direction, while, in going back, it has no effect whatever on the same. When properly applied, this invention makes a very efficient feed for sewing-machines.]

26,262.—Wm. M. Ferry, Jr., of Ferrysburgh, Mich., for an Improved Journal Box for Saw-mill Carriages:

I claim a new article of manufacture, to wit, a single casting, A, moulded with an intermediate space, B, and with off-setting boxes, C D, on each side of said space, substantially as and for the purpose set forth.

26,263.—Henry Fisher, of Alliance, Ohio, for an Improvement in Railroad Hand-cars:

I claim the manner, substantially as described, of combining the hand crank-shaft, F, with the axle of a railroad hand-car, so that, when the crank-shaft, F, meets with any obstruction, it disconnects automatically from the axle and ceases its revolution with the frame, and thus prevents a sweeping off of the operators from the platform, as set forth.

[This invention is designed to prevent the many accidents which result from the use of railroad hand-cars. In using these cars, very often the crank of the driving-shaft catches into the clothes of the operator, and before he has time to free himself, he is swept off the platform on to the track, seriously injured or killed. To avoid these accidents, Mr. Fisher has combined the crank-shaft with the axle of the car, so that the moment the crank catches in the clothes of the operator, or meets with any obstruction, the shaft disconnects automatically from the axle, and thus ceases to be moved round by the momentum of the car. This invention is one which requires no commendation, as it speaks for itself.]

26,264.—Dennis C. Gately, of Newtown, Conn., for an Improvement in the Manufacture of Rubber Belting:

I claim the method described of imparting a smooth and finished surface to belts or bands of india-rubber or gutta-percha, the same consisting in placing them in contact with sheets or strips of vulcanized india-rubber or gutta-percha, and then vulcanize them by applying heat, substantially in the manner and for the purposes set forth.

26,265.—Dennis C. Gately, of Newtown, Conn., for an Improvement in the Manufacture of Rubber Belting:

I claim the manufacture of belting or banding composed either wholly in part of india-rubber or gutta-percha, which consists in vulcanizing the belt or band, and giving it a smooth friction surface at one operation by feeding the belt or band around or in contact with a series of smooth heated rollers, substantially as described.

26,266.—G. A. Gray, Jr., of Cincinnati, Ohio, for an Improved Bench Vice:

I claim the described combination of the handle, G, loose head, F, and catch, H, with the jaws, screws and endless chain of a parallel bench vise.

26,267.—J. H. Green, of Christiansburg, Iowa, for a Composition for Covering Metals:

I claim the composition described.

26,268.—Wm. J. Horton, of La Grange, Ala., for an Improved Machine for Riving Basket Splints, &c.:

I claim the employment or use of the rollers, C C D, three or more, knife, H, placed in the gate, G, and the guide-plates, E E, ar-