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**A SYSTEM OF GAGES FOR IRON WORK.**

The gas-fitters of this country and Europe, or, at least, England, agree on a system of threads for various sizes of pipes. If a gas-man is told the size of a gas or steam pipe, he knows the number of screw threads to the inch that is employed to fit that particular size. To be sure, the graduations of the threads might have been on a scale more easily followed than that now in use. But the system has, with its imperfections, such an advantage as to commend itself to mechanics generally.

In establishments of any considerable importance, a perfect system of gages for screw threads, graduations of drills, and of arbors, as well as of other measurements, is adopted and steadily followed. They may not, and rarely do, coincide with those adopted by other concerns. Indeed, some establishments have purposely adopted for their bolts, screws, and nuts, fractional threads, which cannot be easily mated otherwheres. Their object was to compel the owners of their tools or machines to return to them for parts or repairing. This sort of management was very short-sighted. For a time it might be profitable, but eventually those who were thus restricted, hampered, and embarrassed, ceased to patronize so selfish a policy, and induced others to follow their example.

If interchangeable parts are an advantage in the works of a single concern—if a uniform system of gages is profitable to the purchasers of one machine—why may not the same systems be of much greater benefit universally, or generally applied?

Our mechanics depend upon the public for support. Their work is intended to benefit generally the people, while it advances themselves specially. A broad, human idea will be in the long run of much more advantage to them, even, than a contracted, selfish practice.

Machines are built in one section of the country and sent to another, perhaps at a distance of a hundred or a thousand miles from the place of manufacture. They may be used where the tools and talent necessary for their repair are wanting, or, at least, where only ordinary means and appliances for such a purpose are to be obtained. In such cases the difficulties of repairing a break, or remedying a defect, are greatly increased if the parts have been made to an odd gage. Perhaps a screw is wanting

and the thread is fractional; there is no remedy but to send to the manufacturers at an expenditure of time and money, which at times can be ill made.

This difficulty can be partly obviated by sending duplicates of those parts most likely to be lost, broken, or injured; but it does not cover all the exigencies which may arise. If a uniform system of gages for iron work was generally adopted, or agreed upon by the leading concerns of the country, the use of machinery would become more popular, particularly in agricultural sections, and much of the cost of repairs be saved. There can be no adequate reason why such a system should not be adopted. The clannish prejudice that seeks to monopolize all the benefits of one particular method of doing work, which is not the subject of a patent, by refusing to adopt a general design, is too belittling to measurably influence our mechanics in opposing such a movement.

**CHILLED SHOT AND THE SHOE-BURYNESS EXPERIMENTS.**

As the facts come to hand, it is apparent that the success of the shots made by the nine-inch gun at Shoeburyness, on the 20th of September, was due mainly to the character of the projectile, and not to the gun nor the charge of powder. The Palliser shot and shell are made of chilled iron, which has been pretty satisfactorily proved to be superior in penetrating qualities to either wrought iron, ordinary cast iron, or steel. Both steel and chilled shots were used in these experiments, but while the hardened-steel shots failed to penetrate through the target, and either broke in pieces, or were compressed and bulged out of shape, every one of the chilled-iron shots did effective service, never in one instance changing in form.

The target used was about forty feet long by eight feet high, built of a single thickness of rolled wrought iron, eight inches through, bolted by the Palliser screws to a backing of eighteen inches of oak timber and an inner plate of three-quarters of an inch iron. The whole was sustained by heavy timber backs. The face of the target was not in one plane, but half of its length was inclined at an angle of thirty degrees to the other half, the line of fire being the same in both cases; so that a shot against the inclined face would make, with the target, an angle of sixty degrees. The gun was a nine-inch muzzle-loading rifle, with increasing twist of thread, throwing shot of 250 pounds with charges of forty-three pounds of powder. The distance fired was 200 yards.

The steel shot were cylinders having either pointed heads, struck on a circle the diameter of the shot, flat heads, or the Belgian or ogee head. All of them were hardened in prussiate of potash and oil, or water. Some of them were solid, others, shells with the head screwed into the body, or the base secured in the same manner. Out of twenty-four shots twelve were of this character. Not one of them passed through the target, and every one was either broken into fragments or bulged out of shape.

The Palliser chilled shots in every case penetrated the iron plate, and in one instance, on the square face of the target, went entirely through plate, backing, and lining, and lodged in a pile of iron plating, brick, and stone masonry, twelve feet in the rear of the target. In no instance was the form of the shot changed. The Palliser shots and shells have heads formed on a radius of one-and-a-half diameters of the cylindrical portion. Whenever the Palliser shots struck the inclined face of the target they penetrated, while the cast-steel shots sometimes glanced off.

One circumstance in this trial is remarkable. The steel shots were so hot after striking the target that they could not be handled, while the chilled shots were barely warm. This, with the fact of the change of form in the steel projectiles, proves that much of the energy of the shot had been expended in this direction instead of in penetration.

While the velocity of the shots fired in our Fortress Monroe experiments exceeded in no instance 1,155 feet per second, that of those in this Shoeburyness trial ranged from 1,260 to 1,340 per second. At such an initial velocity, with a distance of only 200 yards between the gun and target, it ceases to be

very surprising that it was possible to throw shot through such a barrier.

**SOUTH AMERICAN BEEF IN ENGLAND.**

In No. 14, present volume, we made a notice of several plans proposed in England for bringing the beef of South American cattle into that country in a fresh state. Among them was that of Messrs. McCall & Sloper, which was but the ordinary process of canning, so well known here, except that the meat is in no case partially cooked, and the tins are lined with a veneer of wood, for what purpose we are not informed.

By our recent English exchanges, we find the trial has been made, and has proved eminently satisfactory. On the 27th ult. a public entertainment was given, at the London Tavern, at which the courses were composed of beef from Buenos Ayres, served up in soups, steaks, roasts, boiled, stewed, in pies and puddings, and pronounced by gastronomic critics and regular "diners-out" to be unexceptionable. The chairman of the meeting stated that there were annually exported from that district of South America 2,500,000 hides, the carcasses being left to rot, or used as manure. He said, also, that the meat could be put up, shipped to England, and retailed over the counter, by the pound, at less than five pence—eight cents.

This is a subject as interesting to us as to our English cousins. The high price of beef here, especially in our cities and large towns, is alarming. Steaks from twenty to thirty cents per pound are luxuries not to be indulged in by everybody. Even corned beef retails at twenty cents. We need not go to South America to procure cheap beef, if it can be put up and transported in a fresh state. Texas is, *par excellence*, a cattle-growing country. Immense herds range over its prairies, which never find their way north except on the hoof. Here is an opportunity for some enterprising man, or a company, to benefit the community and make fortunes.

Even if we went to South America, it seems as though a very large margin might be left for profit. The price of beef which is eaten in this country, more than any other meat, fixes the price of other meats, and if this could be furnished at a cost to the consumer of from eight to ten cents per pound, the expenses of living would be very sensibly reduced.

**THE SIMPSON PROCESS.**

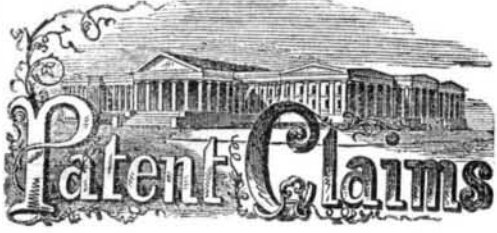
The collodio-chloride, or Simpson process for photographic printing, was published in the SCIENTIFIC AMERICAN about a year ago, and is now extensively employed in this country, especially in the production of "porcelain" photographs. It is the discovery of G. Wharton Simpson, Esq., Editor of the London *Photographic News*, who declined to take patents, but generously donated the improvement to the public service. The Simpson process consists in the addition to the common collodion of a small quantity of nitrate of silver and a chloride, which forms chloride of silver in the collodion, and imparts to it the appearance of milk. This collodio-chloride, on being poured upon paper, glass, or other substance, and dried, forms a highly sensitive and polished surface, upon which prints of great beauty may be produced, by means of a negative, in the usual manner. Applied upon what is termed "porcelain glass," the process is capable of remarkable artistic effects.

We believe that our countrymen enjoy the reputation of producing the best results in the line of porcelain pictures, and probably no one has succeeded in carrying the art to higher perfection than Mr. J. M. Herron, whose studio, corner of Fifteenth street and Sixth avenue, New York, we lately visited. It is a model establishment throughout. His porcelain specimens are among the finest that we have seen. As an operator he seems to possess the real artist feeling, and while preserving the best natural expression of the subject, produces a portrait of exceeding brilliancy, softness, and delicacy—the hard lines, wrinkles, furrows, freckles, etc., being reduced or omitted. Ordinary people are thus made to yield charming pictures, and natural beauty is exquisitely rendered. Lovers of the art will be gratified by an examination of Mr. Herron's specimens.

Porcelain pictures have the quality of exhibiting the subject both by reflected and transmitted light. Each method of viewing gives a different effect. ea

that such prints are, in a certain sense, double pictures.

The porcelain glass used in photography is, we believe, composed of ordinary window glass rendered opaque and milk-white by the mixture with the molten metal of oxide of tin and arsenic. We do not know the exact formula, and we wish that some of our readers would send it to us for publication.



ISSUED FROM THE U. S. PATENT OFFICE  
FOR THE WEEK ENDING OCT. 16, 1866.

Reported Officially for the Scientific American.

**77** Pamphlets containing the Patent Laws and full particulars of the mode of applying for Letters Patent, specifying 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.

**58,746.**—TANK FOR CONTAINING AND TRANSPORTING PETROLEUM.—W. C. Allison, Philadelphia, Pa.

First, I claim a vat or reservoir, having an outer casing of wood and a thin petroleum-proof lining of metal, so suspended within the casing and detached from the sides and bottom of the same that it can readily, and without danger of rupture, yield and accommodate itself to any twisting or other distortion of the vessel, as set forth.

Second, The combination, as described, of a tank or reservoir, consisting of an outer casing of wood and a petroleum-proof lining with the frame of a car.

Third, The air space between the tank and sides and roof of the car, for the purpose described.

Fourth, The perforated pipes, M, or their equivalents, forming a communication between the interior of the tank and the ventilated space, N, beneath the roof.

Fifth, Causing the mixed air and gas to pass through the perforations of the ventilator, before it reaches the external air, for the purpose described.

Sixth, The roof, G, of the tank, with its transverse beams, q, both being covered with a petroleum-proof lining, substantially as described, and the transverse beams serving to prevent undue agitation of the contents of the tank, as set forth.

**58,747.**—MACHINE FOR PEELING WILLOW.—George S. Anderson, Jeffersonville, Ind.

I claim the wheel, E, rollers, H, brakes, S and V, when constructed, combined and arranged to operate together, substantially in the manner and for the purpose specified.

**58,748.**—GEOGRAPHICAL MAP.—E. A. and A. C. Apgar, Philadelphia, Pa.

First, We claim the use for map drawing of such geometrical figures as are constructed by taking in each case some one line as a measuring unit, by means of which the lengths of other lines about the figure are determined.

Second, We claim the intersecting and bisecting of certain lines about our geometrical figures for the purpose of determining the positions of certain prominent points along the coast lines of the continents.

Third, We claim, as original with us, and desire to secure by letters patent, that symbolic language for maps in which dots and lines, arranged substantially as described, are used to represent certain numbers, whether of population of cities, or the height of isolated hills, mountain peaks, or plateaus, in feet or miles, or other units of measurement.

**58,749.**—SCREEN FOR GAS PURIFIER.—T. G. Arnold, New York City.

I claim the new manufacture of galvanized metal gas sieves, in contradistinction to ungalvanized iron gas sieves, for the purposes hereinbefore set forth.

**58,750.**—EGG BEATER.—Varnum G. Arnold, Providence, R. I.

I claim the combination of the cylindrical can, provided with a funnel-shaped mouth and a broad base with a series of cutters spirally arranged and fixed to the inside of the can, or to a rim fitting inside the can.

**58,751.**—CARPET STRETCHER AND TACK HOLDER.—Frederick Ashley, New York City.

I claim the device, for the purpose specified, consisting of the toothed bar, B, and the spring arm, F, with its notched end, G, bearing against the inner side of the notched jaw, H, of the bar, B, and operating in the manner and for the purpose described.

**58,752.**—MACHINE FOR PLANTING COTTON SEED.—Nathan E. Badgley, New York City.

First, I claim the construction of the base, V, and its connection with the handles.

Second, The manner of constructing the draft piece, D, with its fastenings.

Third, The construction of the hopper with its several hoops and its attachment to the cross-piece, T, as herein described.

Fourth, The attachment of the cover, M, to the base and the rod, R, with its coiled spring, N.

Fifth, I also claim the combination of the several parts as herein described and substantially set forth.

**58,753.**—WASHING MACHINE.—Alexander Badlam, Sr., San Francisco, Cal.

I claim the combination and arrangement of the water box with curved slats, a, metal dogs, EE (serving as weights), handle, E', and dash boards, c, c, the whole being constructed and arranged for joint operation, substantially as described.

**58,754.**—BARREL MACHINERY.—Horace Baker, Cortland, N. Y.

First, I claim the annular wheel, O, and knives, O', in combination with the swinging frame, P, when respectively constructed and arranged for use, substantially as set forth.

Second, The combination and arrangement of the annular guide, F, and pulley, G, for suspending and revolving the barrel of a churn, with the guide bar, H, carrying the plane, I, and operated by an automatic feed, substantially as set forth.

**58,755.**—USE OF HYDRO-CARBON LIQUIDS FOR TRANSMITTING HEAT.—William C. Baker, New York City.

I claim the employment of hydro-carbon liquids to circulate in heating surfaces, as and for the purposes set forth.

**58,756.**—WASHING MACHINE.—Hiram Barker, Aurora, Ind.

I claim the construction of the watering tub, A, the movable shaft, D, with its pins, the flange, E, and ribs, F, all the whole being arranged and operating in the manner herein set forth.

**58,757.**—GLOBE.—Elias Bascom, New York City.

I claim the construction of a transparent or opaque globe, with adjustable wires and end plates, in combination with an illuminated axis, as herein described and for the purposes set forth.

**58,758.**—WOOD-TURNING LATHE.—August Basse, Quincy, Ill.

I claim the arrangement of the carriage end, J2, stand, J3, and stand, K, for the purpose of supporting the cutter shaft, K', and permit it to be set and fastened at such a position or angle as may be desired, when constructed and operating substantially as described.

**58,759.**—WHIFFLETREE.—Alonzo Bell, Washington, D. C.

I claim, as the distinctive feature of this improvement, the application of a combination whiffletree and clevis to the center of double whiffletrees whereby a direct and equalized strain is brought to bear on the center of the carriage, so that by this application or combination of movement the traces shall have free play, and equal and steady draft imparted to the centre of the carriage, and the present continual leverage of one horse against the other obviated.

**58,760.**—HOOP LOCK.—G. N. Beard, St. Louis, Mo.

I claim a hoop lock formed with a rectangular slot, a1, connecting with and forming a part of curved slots, a2 and a3, substantially in the manner and for the purpose herein set forth.

**58,761.**—CREASING OR ORNAMENTS LEATHER.—James M. Bent, Wayland, Mass.

I claim the revolving creaser, I, in combination with the self adjusting pressure roll, K, operating substantially as described for the purpose set forth.

I also claim, in combination with the above, the lever, Q, or its equivalent, substantially as and for the purpose described.

I also claim the gage, L, in combination with the creaser, I, and pressure roll, K, substantially as set forth.

**58,762.**—PUNCHING LEATHER.—James M. Bent, Wayland, Mass.

I claim the revolving punch, I, with its die, E, substantially as and for the purpose set forth.

I also claim, in combination with the above, the pin, g, for clearing the punch, I, substantially as described.

I also claim the spring, G, or its equivalent, for the purpose of causing the die, E, to adapt itself to leather of varying thickness, substantially as set forth.

**58,763.**—SOUND BOARD FOR PIANOS.—Jacob Benz, Philadelphia, Pa.

I claim the construction and combination of two different sound boards with transverse-running wood fibers, and provided with supporting ribs and air passages, substantially as and for the purpose as described and set forth.

**58,764.**—GAS BURNER.—Hermann Berg and Andrew Blessing, Springfield, Mass.

We claim, as a new article of manufacture, the Argand burner, constructed in the manner herein set forth.

**58,765.**—FRICTION CLUTCH PULLEY.—George W. Bishop, Stamford, Conn.

I claim the arm, C, and dog, D, pivoted thereto parallel with the pulley, A, operating in combination with the sliding sleeve, E, substantially as described and for the purpose specified.

**58,766.**—PISTON PACKING.—James Broughton, Lambertville, N. J.

First, I claim the arrangement of the body, A, hub, B, division plate, D, follower, E, rings, b, b, grooved T-shaped keys, c, springs, F, in the recesses, g, combined and operating in the manner and for the purpose herein specified.

Second, The grooves, a, in the keys, c, which close the joints of the packing rings, for the purpose set forth.

**58,767.**—LUBRICATOR FOR STEAM ENGINE.—John Broughton, New York City.

I claim the combination and arrangement of the reservoir, O, and valve stem, E, having vertical openings, P, P, and made to screw in the chamber, B, with the nipple, F, tubular cap, G, and air chamber, K, the whole being constructed and operated substantially in the manner and for the purpose set forth.

**58,768.**—GRINDSTONE-JOURNAL BOX.—Thomas W. Brown, New York City.

I claim the improved grindstone-journal box as made with the wheel-journal caps, c, c, c, arranged and combined with the wheel cover, C, so as to extend over and about the wheel journals, substantially as and for the purpose specified.

I also claim the arrangement and application of the duplex spring catch, E, with the projections, d, d, from the cover, c, and with the sides of the box, A, as specified.

**58,769.**—METHOD OF SINKING AND TUBING WELLS.—John H. Bruin, Elmira, N. Y.

I claim a tube and boring bit for sinking and tubing wells, consisting of a tube, A, and a perforated tube, B, to the base of which is attached a spiral bit, C, and having a socket in the bottom of the tube, B, for receiving the point of the rod, D, said several parts being respectively constructed and combined for use, substantially as set forth.

**58,770.**—EGG BEATER.—Charles H. Butterfield, Sturbridge, Mass.

I claim, as an improved manufacture, the glass egg beater jar as made, with the contraction as arranged at or near its middle, the same being as and for the purpose or objects as hereinbefore set forth.

I also claim an egg beater as composed of the case contracted at its middle, as represented, and a liquid rotator arranged within the contraction and connected to the stopple of the case, by means substantially as set forth.

**58,771.**—CAR-SEAT INDICATOR.—Francis H. Carney, Boston, Mass.

I claim the car-seat indicator, constructed substantially in manner and for the purposes hereinbefore described.

**58,772.**—COFFEE MILL.—Nathan Chapman, Hopedale, Mass.

First, I claim locking or fastening the top of the mill case together, by making the bottom of the hopper to surround the top of the case, when constructed and operating substantially as described.

Second, I claim making the bottom of the hopper eccentric, or the top of the case eccentric, or both, for the purpose of adjusting the top of the case to make the mill grind fine or coarse, substantially as described.

**58,773.**—SULKY PLOW AND HARROW.—James E. Cheesebro, Buffalo, N. Y.

First, I claim the combination and attachment of a plow to a sulky in such manner that the plow beam shall pass under the axle of the sulky and project forward, and the plow handles project in rear of the axle and in convenient grasp of the plowman as he sits upon his seat, substantially as set forth and described.

Second, The combination of the guide stirrup, B, with the slide, G, for the purpose of forming a connection of the forward end of the plow beam with the sulky, substantially as set forth.

Third, Connecting the rear end of the plow to a brace or foot board, D, projected from and in rear of the axle, for the purpose as described.

Fourth, The driver's seat, A4, and foot board, D, projected and supported in rear of the axle, for the purpose and substantially as set forth.

Fifth, The combination of a harrow, M, with the sulky, for the purpose and substantially as described.

**58,774.**—GLOBE VALVE.—William Chesley, Cincinnati, Ohio.

I claim the construction and arrangement of the boss, d, cap, b, and plug, a, with reference to the valve stem, c, for the purpose and as herein set forth.

**58,775.**—GOVERNOR VALVE FOR STEAM ENGINES.—William Churchill, St. Louis, Mo.

I claim, First, The arrangement of the throttle and governor valves, in the manner substantially as set forth.

Second, The combination of the nut, G, stem, F, and spring, H, whereby to secure the action and regulation of the governor in accordance with the demands of power and speed.

**58,776.**—SETTING FENCE POSTS.—Henry W. Clarke, Newport, R. I.

I claim the arrangement and application of the hollow frustum, B, its cement or head, D, and the mass of gravel, E, or its equivalent, with a post, A, the whole being substantially as and for the purpose set forth.

**58,777.**—MILL FOR CRUSHING QUARTZ.—Cummings P. Colby, Lancha Plana, Cal.

I claim the combination of the eccentrics, B, with collars and spindles and springs, a, arranged to operate the stampers, substantially as described.

**58,778.**—STRAW CUTTER.—Robert Conarroe, Camden, Ohio.

I claim, First, The combination of the eccentric, e, pin, d, and roller, d'.

Second, The combination of the grooved eccentric cams, F, on the shaft, G, with the guides and frame C, D, and knife, E, of a straw cutter, substantially in the manner and for the purpose set forth.

**58,779.**—WOOL PRESS.—Solon Cooley, Oakwood, Mich.

I claim the arrangement of the bottom board, A, the sides, B, and ends, C, C', as constructed with the follower, H, spring arms, G, G, rack bars, F, and hooks, I, I, substantially as and for the purpose herein specified.

**58,780.**—SHAFT FOR RUBBER ROLLERS FOR WRINGING AND WASHING MACHINES.—John Cram, Chicago, Ill.

I claim constructing a shaft, A, with a series of recesses and corresponding pins or projections arranged and operating substantially in the manner and for the purposes herein specified and described.

**58,781.**—LADDER.—Charles Croley, Dayton, Ohio.

First, I claim the sliding pieces, h, h, connected to the ladder, A and B, substantially as and for the purposes specified.

Second, The combination of the projections, g, g, the books, i, i, and step, s, substantially as and for the purpose described.

Third, The base pieces, C, the braces, D, and jointed bar, E, when constructed and arranged with reference to the ladder, B, in the manner substantially as described and for the purpose specified.

**58,782.**—HEATING STOVE.—E. N. Cummings, Colebrook, N. H. Antedated Oct. 4, 1866.

I claim a stove for heating purposes made substantially as above described, its upper and lower parts, A, E, being connected by serpentine flues whose openings in the upper part, E, are controlled by two independent dampers, substantially as shown.

**58,783.**—PROJECTILES FOR ORDNANCE.—J. M. Currier, Washington, Iowa.

I claim the projectile, A, with the conical point and tapering rear, having the packing ring, B, applied as shown and described.

**58,784.**—DEVICE FOR HANGING WALL PAPER.—James Warren Davis, Washington, D. C.

I claim the roller, D, having a yielding surface, the clamping bar, E, the frame, A, B, C, the pivoted arms, F, the bell crank, G, and the spring rods, J, M, the whole arranged and operated substantially in the manner and for the purpose herein described and represented.

**58,785.**—MACHINE FOR HARVESTING, HUSKING AND SHELLING CORN.—D. A. Dickenson, Baltimore, Md.

First, I claim a machine for cutting the stalks from the hill row, separating the stalk from the ears, husking the ear and shelling it, when the different pieces or parts thereof are constructed, arranged, and operated substantially as herein recited.

Second, I claim combining with cutting and husking or shelling machines the arrangement of the means or parts constituting the apparatus for cutting the stalk from the hill or rows, when constructed and operated substantially as set forth.

**58,786.**—CAR WHEEL.—Wallace Dickinson, Brooklyn, N. Y.

I claim the elongated hub, H, having flanges, s, s', provided with a bush, d, having cavity, c, and openings, m, m, and washer, w, all constructed and arranged substantially as described and for the purpose set forth and shown in the accompanying drawings.

**58,787.**—SKID FOR SUPPORTING BARRELS.—W. W. Doane and W. P. Burr, Brewer, Me.

We claim the improved hoghead supporter, or combination and arrangement of rollers and skids, made and applied substantially as specified.

**58,788.**—GANG AND SUB-SOIL PLOW.—R. L. Dodge and E. M. Walker, Gallatin, Mo.

First, We claim the construction and arrangement of the pole, H, in connection with the standard, I, and axle, B, so that it may be elevated and lowered, substantially as described.

Second, We claim the pole, H, when hinged to the cross-bar of the frame so as to form a lever to raise the plows, in combination with the plow beams, E, E, and plow, C, C', when constructed for the purposes and substantially as described.

**58,789.**—COMPOSITION FOR WALKS, PAVEMENTS, ETC.—W. C. Dodge, Washington, D. C.

I claim the composition and process herein described when applied as and for the purposes set forth.

**58,790.**—MAGAZINE FIRE-ARM.—Wm. C. Dodge, Washington, D. C.

First, I claim the sliding tube, B, with the spring, g, attached and sliding in the groove, h, in combination with the barrel, A, and breech frame, C, when said parts are arranged to operate as and for the purposes herein set forth.

Second, In combination with the sliding tube, B, I claim the spring catch, c, located inside of the breech frame, C, and arranged to be operated from the outside, as shown and described.

Third, I claim forming the chamber for the reception of the cartridges at the rear end of the tube, B, by means of the pieces, m, or their equivalents, substantially as described.

**58,791.**—STEERING APPARATUS.—F. P. Duprazy, S. M. Dumont, and John Dickson, Veray, Ind.

First, We claim the intermediate sleeve or double spiral and drum, D, E, constructed substantially as set forth for the purpose specified.

Second, We claim the arrangement of the wheel, A, drum, B, rope or chain, C, drums, E, E', pulleys, D, D', and tiller, G, forming a progressive-power steering apparatus, as described.

**58,792.**—HAT BOX AND VALISE.—Zoheth S. Durfee, Philadelphia, Pa.

I claim combining a hat box with a modification of the common traveling bag or valise, substantially as and in the manner described and shown in the accompanying drawings.

**58,793.**—WATER COOLER.—John Eckert, Madison, Ind.

I claim the sheet-metal chamber, A, cast bottom, B, b, and thimble, C, c, the whole being combined and adapted to operate as set forth.

**58,794.**—INSTRUMENT FOR TRANSPLANTING PLANTS.—W. C. S. Ellerbe, Camden, S. C.

I claim an improved plant transplantor formed of a cup, A, handle, C, and of a pusher, D, and rod, G, constructed and com-