is manifestly out of the question for the editor of Notes and Queries to decide as to the comparative greatness of these men. They are each great in their way, and they differ so much in their respective lines of investigation as to render a comparison impossible. In regard to the magnet question, you are both right. The magnet core becomes magnetic when the current passes around the bobbin, and the current also induces a momentary current in the iron of the core when the circuit is closed; also when it is opened. The current thus induced, however, is not useful, but detrimental.

(3894) G. R. R. writes: I want to make two bells for a line three blocks long, ground wire at each end, No. 16 line wire galvanized. What will be the best, one coil or two to each bell What number wire and how many feet to the coil, to be used with a push button? A. Use a U-magnet with two bobbins. No. 24 magnet wire will answer. You will require 125 feet on each magnet. While No. 16 wire will answer for the line, No. 12 would be preferable, as it offers only half the resistance.

(3895) B. H. F. writes: I would like to know how much wire, iron, etc., it will take to make a small dynamo for shocking purposes? A. Make a magneto using a compound permanent U-magnet for a field magnet. Use a U-electro magnet for an armature. It should be wound with about 500 feet of No. 36 copper magnet wire.

(3896) J. S. asks: 1. In a telegraph sounder for a line of 500 ft., how much and what size wire will the magnets need, and the height and diameter of magnets? A. Use about 125 ft. of No. 24 magnet wire, make the cores of ⅜ iron, each 1¼ in. long. The diameters will be about 1¼ in. 2. Should Norway iron be used for armature and core, and size of core? A. It would be best, although common American iron will answer if well annealed. 3. Will brass or copper do for the contact points on key in place of platinum? A. Yes; but either will soon corrode.

(3897) R. H. M. writes: Allow me to add my mite to the storage battery. Inclosed find sample of punching The lead is 1-18 in. thick, sizes are 2 by 4⅛, and when punched and filled with red lead they are folded to make 2 by 2 in., four plates to the cell, six cells to the box, ten boxes to the battery, connected to a roller. Charge in multiple arc, discharge in series, and by little switches on the multiple side of the roller I can have any number of large cells. Prefer large plunging cell to charge with. Gravity gave me too much trouble. What do you think of the style of punching? A. The sheets of lead are punched so as to tubulate them on the outside. This form of plate is effective, but not new. The best practice is to charge storage batteries in series.

(3898) A. H. H. writes: About two or three years ago I tried to run our sewing machine by electricity, constructed three large plunge batteries with two gallon cells, used a ⅛ h. p. C. & C. battery motor. They ran the machine powerfully at first, but run down in about three hours, using six pounds bichromate soda and 9½ qts. sulphuric acid. Expense about twenty-five cents an hour. For the last year I have used two small storage cells, charged by eight Gethius' gravity batteries in series. They remain in connection with the storage cells (in house cellar), from which wires run up to the sewing room above. There has been plenty of power at all times to run sewing machine, and for experiments, running a medical coil with resistance between, etc. The gravities have not been recharged, and now at the end of the year there is plenty of blue vitriol and zinc in the jars. The only trouble is there is copper deposited on the bottom of the porous cells, which I do not know how to get rid of. The expense has not been one cent a day, unless the porous cells are spoiling from the deposition of copper. A. Both storage and primary batteries have done remarkably well. You could remove the copper by means of nitric acid, but the cost would probably be as great as that of new porous cells.

(3899) W. L. C. asks as to the method of making petrolatum of any desired melting point, that will remain smooth and not become granular. By mixing paraffine wax and fluid petrolatum by the aid of heat, a compound is obtained which remains smooth for a week or so. A. Simply melt the two constituents together on a water bath. If this does not give a satisfactory product, try the addition of a little oil of sweet almonds, or even sweet oil or cotton seed oil.

(3900) W. O. D. asks: Why does plunging a red hot iron into a weak gravity battery revive it? A. Any slight revival would be due to the increase of temperature. The chemical status of the battery is unaffected.

(3901) E. O. writes: 1. Referring to electric motor in SUPPLEMENT, No. 641, of April 14, 1888, would it have sufficient power to propel a small boat, say about twelve feet long? A. The motor referred to will run a boat of the length mentioned. 2. What would be the proper size of screw to put into a boat of that size? A. The screw should be a two or three bladed one of eight inches diameter. The motor should be geared by a belt or gearing, so that it will make about four revolutions to one of the screw. 3. Could the power of the motor be increased by adding more cells or would a larger motor have to be made? A. The power of the motor can be increased by adding more cells. 4. What is vulcanite? A. Vulcanite is hard vulcanized rubber. 5. Have you any back SUPPLEMENTS, giving directions for making small electric boats for amateurs? A. Consult SUPPLEMENT, Nos. 362, 558, 706, 786, 815. These do not apply to amateurs only, but will be useful.

(3902) R. E. M. says: I would like to ask through the columns of your valuable paper, Is there any kind of gas gun in practical use? One which uses coal gas as an explosive. Please give a description. A. There are no gas guns in practical use. We doubt if a practical one has been invented.

(3903) F. McK. asks: 1. Would a drum armature used on the simple electric motor be as efficient as the one described? A. Yes. 2. With cast iron field magnets, what would be the E.M.F. and amperage, when used as a dynamo? A. Without some calculation, this would be a matter of conjecture. If wound according to the directions for the motor, it would probably yield a current of two or three amperes, having an E.M.F. of eight or ten volts. 3. Is a battery connected to give 16 volts and 4 amperes, the best arrangement for the motor? Would not a battery giving 8 volts and 8 amperes run it as well? A. If the motor is wound with coarse wire, the latter would be preferable. 4. What is the speed of the motor with eight cells of plunging bichromate plates, six by ten inches? A. About 2,500 revolutions per minute.

(3904) C. Y. writes: In your answer to No. 3725, SCIENTIFIC AMERICAN, December 12, 1891, page 378, you say that an induction coil cannot be used for lighting an incandescent lamp. Will you please state the reason why? Is not the electricity the same as from a dynamo? A. Electric lighting is effected by heat. To secure a sufficiently high temperature in an incandescent lamp to render the carbon filament highly luminous, the filament must be small enough to offer sufficient resistance to the current to cause it to become heated; or, to state the case in another way, the current must be so great as to be incapable of passing through the lamp without heating the carbon filament. The electromotive force of the current from an ordinary induction coil is very great, say from 10,000 volts up, sufficient to carry it through a large number of lamps; but the current is deficient in amperage or quantity, the amperage being infinitesimal, so that the carbon filament forms a comparatively good conductor for it, and is therefore not heated by it.

(3905) C. L. W. writes: 1. I am constructing a simple electric motor after the one described in SCIENTIFIC AMERICAN, of March 17, 1888, and would like to know whether, in the armature core, as my No. 18 wire is in three pieces, the ends must actually be in electrical connection (must they touch)? A. It is not necessary to have the wire of the armature core continuous. 2. Must the ends of the Russian iron actually touch? A. It is not necessary. 3. Will twelve convolutions of Russian iron do for the field magnet? A. Follow the instructions given in the article referred to, or, better, in SUPPLEMENT, No. 641.

(3906) N. E. W. asks: How many h. p. will a spur wheel 9⅝ in. in diameter, 1¼ in. pitch, 4½ in. face, 288 revolutions transmit? How many revolutions is the safety limit to run a fly wheel 7 ft. in diameter, 6 armatures, weight about 3,200 lb.? A. The pinion should transmit from 60 to 70 horse power. If the flywheel is solid and of good sound metal, it should be safe at 200 revolutions per minute.

3907) J. S. asks: 1. Is the application of electrical power to the propulsion of railroad trains feasible? A. It is thought feasible by several of our great electrical inventors. 2. If so, what hinders the adoption of same? A. The lack of a practical demonstration showing it to be an improvement over the present system. 3. Is it applicable to the propulsion of light trains of mail and express matter? A. Yes. 4. What would probably be the effect of the adoption of this last on the railway mail service? A. It would be impossible to predict.

(3908) G. G. asks: 1. The large size Edison-Lalande battery described in SUPPLEMENT of March 7 is rated at 900 ampere hours. Does this mean that the cell gives a total of 900 amperes in fully exhausting its elements, or that it will keep up a constant flow of one ampere for 900 hours? A. Either would be correct. 2. What is meant by ampere hours? A. The equivalent of one ampere of current for one hour. Thus: one ampere for one hour is one ampere hour, one ampere for two hours is two ampere hours, two amperes for 1 hour is two ampere hours, one-half ampere for four hours is two ampere hours, etc. 3. If an Edison incandescent 2 C. P. lamp is rated resistance 4 ohms, E.M.F. 5 volts, amperes 1¼, how long would above battery run it (if it had sufficient voltage)? A. Divide 900 by 1¼ and you have 720, which is the number of hours your hypothetical battery should run the lamp.

(3909) C. E. W. says: The water in our recently finished cistern is hard and, of course, tastes of the cement. Can you, through your valuable paper, tell me what will make the water soft, and also what will destroy the taste of the cement? A. As to the water now in the cistern, nothing can be done to destroy the taste of the cement or make the water soft. Empty the cistern of its present supply and the water hereafter will be but little, if any, affected by the cement.

(3910) W. A. S. asks: How can I learn engraving? Would I have to commence as an apprentice in an office where engraving is done? Or could I learn from books? How long does it take one to become a fair average engraver? What pay do they receive? A. There are two principal divisions in the art of engraving, both paying well to persons attaining proficiency. Both can be partially learned from books and persistent practice. For wood engraving, we recommend "Hand Book of Wood Engraving," $1 mailed. For copper plate engraving a book on "Practical Instruction in the Art of Letter Engraving," $2 mailed. For etching we have "Lalande on Etching," $3.50 mailed. If you are ingenious and well up in draughting, you can make much progress alone.

(3911) S. A. U. says: A B and C argue on the principles governing the flow in artesian wells. A says that the water from a well will rise as high as the surface of the body of water that furnishes the supply for the artesian well basin if there are no other outlets, B, that it will rise less, owing to gravity and friction. C claims it will rise to a higher point, on account of a small outlet to the great pressure of a large body of water. To illustrate, A says, take a barrel filled with water and attach a hose to a hole in the bottom of the barrel, raise the hose outside of the barrel, and the water will stand as high in the hose as the surface of the water in barrel. B says it will stand lower in the hose, owing to gravity and friction, and C claims the water water rise to a higher point in the hose on account of the great pressure from the large body of water in the barrel. A contends that it is according to the law of gravitation that water will seek its level, that friction does not exist, as the question is, how high the water will rise, not flow; that the surface of two bodies of water connected below the surface will rise to the same level, regardless of their comparative bulk, and if C's position was correct, then was perpetual motion discovered. Who is correct? A. A is correct every time. B would be correct, if the water was discharging at a lower point than the original head, when gravity would make it flow, and friction would retard the flow. C can take lessons from A.

(3912) R. E. F. asks: 1. How to work hard rubber in the manufacture of very small articles in your valuable paper, the SCIENTIFIC AMERICAN. How is it made from rubber? A. The process of preparing rubber for vulcanization, and the various steps in the manufacture of hard rubber articles, would require a description which would be longer than is desirable for these columns; however, the process of preparing the rubber for vulcanization is in brief as follows: The pure gum rubber is macerated with sulphur and a pigment of the required color, and rolled out into sheets. 2. How to form small articles from hard rubber? A. The prepared rubber is pressed into moulds of plaster of Paris or metal and subjected to steam heat under pressure. The time required for vulcanization varies from one to several hours, according to the preparation of the rubber and the temperature to which it is subjected. You will find much on this subject in SUPPLEMENT, Nos. 249, 251 and 252.

(3913) C. H. H. asks: 1. In the process of manufacturing kid leather from sheep skins, it is necessary to remove the animal grease from the skin before it is tanned. Can you inform me of any substance that will do this, and not injure the elasticity of the skin? A. A volatile solvent, such as light naphtha or bisulphide of carbon, is about the best we can recommend. Steam heat, with wringing out, is also employed. 2. Can you inform me of any chemicals that contain the same properties as the yelk of one egg? A. It is supposed that vitellin, the characteristic constituent, is a mixture of albumen and casein. But this is a very incomplete statement, and the yelk of the egg has never yet been synthesized.

(3914) G. A. D. asks: 1. How many molecules of air are supposed to be in a cubic inch of air? In figures and in words (thus 10,000,000 = ten million). A. According to J. Clerk Maxwell, a cube, each of whose edges is 1-4000 millimeter can contain from 60 to 100 millions of molecules of oxygen or nitrogen, virtually of air. Reducing this to one cubic inch, we have 60,000 to 100,000 trillions, a trillion being represented by 1 followed by 18 ciphers. In powers of ten the molecules per cubic inch would be from 6×10^{22} molecules to 10^{23} molecules. 2. How many in a vessel of one cubic inch internal capacity when exhausted to one millionth of an atmosphere? A. One millionth the above amount or 6×10^{16} molecules to 10^{17} molecules. 3. If I take a glass tube sealed at one end, 16½ inches long and 3-8 inch internal diameter, therein place a glass rod 3-16 inch diameter and 15¾ inches long, this rod will naturally displace a certain amount of air molecules. If in this condition I attach the open end of the tube to an air pump and exhaust it to one millimeter of mercury of the barometric gauge attached to air pump, how many molecules will there still be left in the tube? A. From 182×10^{18} to 109×10^{18} or 182 trillions to 109 trillions.

(3915) G. M. A. says: If a gun be charged with powder to drive the ball at the velocity of a mile a minute at the instant the ball is freed from the gun, supposing the gun to be fired while stationary (not the velocity sufficient to carry the ball a mile in distance in a minute, but the rate of a mile a minute at the time it is freed from the gun) if the gun so charged be placed on a train moving at the velocity of a mile a minute, and be fired in the opposite direction from that in which the train is moving, how far will the train and ball be apart at the expiration of one minute, the train continuing to move at the same rate? If the gun is fired in the same direction the train is moving, how far would the ball and train be apart in one minute? Would the ball be in front or behind the train? A. If fired from the rear of the train, the ball would fall vertically to the ground, and in one minute the train would be one mile distant from it. If fired from the front of the train, the ball would strike the ground in advance of the train, at a distance due to its initial velocity and varying according to its height from the ground, which latter datum is not given. As it would presumably reach the earth in less than a second, and not over one hundred feet in advance of the train, after one minute the train would be nearly a mile in advance of the point where it would reach the ground.

Replies to Enquiries.

The following replies relate to enquiries recently published in SCIENTIFIC AMERICAN, and to the number therein given:

(3794) O. O. E.: I give you a working process for hardening wax for mechanical uses. Melt the wax and add to it hot calcined plaster or any of the ochers previously heated. The amount used depends upon the quality of the wax. The addition of resin will increase the hardness. This mixture can be cast, wrought with a knife, chisel or a saw, or turned in a lathe. In fact it can be used for a variety of useful purposes.—ALFRED C. POPE.

J. D. F. asks how to dye cloth.—J. F. T. asks (1) for an emulsion of cod liver oil, (2) for a pad for rubber stamps.—C. D. asks how to polish horns.—J. W. L. asks for wood fillers and stains.—T. J. A. asks for practical directions for nickel plating.—W. H. K. Jr., asks for a waterproof glue.—H. C. B. asks how to make rubber stamps.—R. B. asks for a window cleaning compound.—Constant Reader asks for (1) an ink eraser, (2) vanishing ink, (3) hair tonic.—C. E. S. asks for cements to adhere to smooth surfaces.—J. F. D. asks for detailed instructions in electroplating with silver.—F. E. B. asks how to keep cider sweet.—J. B. B. asks how to mix a paint for vessels, and for a waterproof cement.

Answers to all of the above queries will be found in the "Scientific American Cyclopedia of Receipts, Notes and Queries," to which our correspondents are referred. The advertisement of this book is printed in another column.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

January 5, 1892.

AND EACH BEARING THAT DATE.

[See note at end of list about copies of these patents.]

Allen G. M., Beloit, Wis., windmill 466,482
Allis, Thos. V., N. Y. City, barbed fencing 466,744
Allis, Thos. V., N. Y. City, barbed fencing 466,745
Allis, Thos. V., N. Y. City, barbed fencing 466,746
Allis, Thos. V., N. Y. City, barbed fencing 466,747
Allis, Thos. V., N. Y. City, metal fencing 466,748
Andrews, Wm. S., N. Y. City, insulator 466,391
Aschendorf, F. W., Wiesbaden, G., ear trumpet 466,531
Assmy, E., Milwaukee, Wis., copying compound 466,483
Atkinson, Chas., Chicago, Ill., plow 466,691
Atwood, L. J., Waterbury, Ct., lamp 466,551
Azcano, y M. S., Havana, Cuba, cigar 466,649
Babcock, S. P., Adrian, Mich., fence post 466,315
Bailey, C. T., Newton, Mass., boots or shoes 466,592
Baily, J. R., Lake Geneva, Wis., cork puller 466,451
Baker, W. C., N. Y. City, heating app 466,552
Barnes, P., Pownal, Vt., tire shrinker 466,392
Barrett, F. W., Springfield, O., talley sheet 466,593
Bartlett, W. E., Edinburgh, Scot., wheel tire 466,532
Barton, R. R., Catlettsburg, Ky., account book 466,316
Baush, C. H., Holyoke, Mass., drilling mach 466,553
Beal, W. C., Tallahassee, Fla., car coupling 466,694
Beam, Aaron R., Waco, N. C., churn motor 466,317
Beaty, W., Silverton, W. Va., steam engine 466,318
Bechtolsheim, C. Von, Stockholm, S., separator 466,484
Bell, Wm. H., San Fran., Cal., glove fastener 466,319
Benet, L. V., Paris, F., guns 466,320
Bickford, J. H., Salem, Mass., car truck 466,595
Blair, John, Phila., Pa., warp sizing mach 466,596
Blair, T. S., Jr., Allegheny, Pa., oxides of iron 466,452
Bogen, A. A., & R. Nix, New Ulm, Minn., quoin 466,650
Bokelund, J. E. A., Majorna, S., varnish 466,393
Borsch, J. L., Phila., Pa., eye tester 466,597
Bradburn, J. A., E. N. Trump, & J. D. Pennock, Syracuse, N. Y., purifying water 466,700
Bradburn, R. E., Louisville, Ky., clamp 466,753
Bransom, W. S., Hunter's Lodge, Va., steam generator 466,651
Bredenberg, A., Br'klyn, N. Y., gathering mach 466,719
Brehmer, Hugo, Phila., Pa., book sewing mach 466,554
Brockington, G., Newark, N. J., bridle bit 466,485
Broomell, H., Phila., Pa., pencil sharpener 466,734
Brown, J. L., & G. Rich, Phila., Pa., H. D. Walton, Moorestown, N. J., umbrella stick mach 466,321
Brown, J. W., Van Wert, Ohio, drive chain 466,735
Brown, M. F., Louisville, Ky., flour bin, etc 466,394
Buehler, R. R., Phila., Pa., transom lifter 466,486
Bunker, W. I., La Grange, Ill., wheel 466,598
Burmeister, Paul, Berlin, Germany, calendar 466,395
Burns, J., Los Angeles, Cal., fruit cutting mach 466,453
Buse, F. A., New Castle, Wyo., sash holder 466,533
Byers, J. S., Knoxville, Ill., steam engine 466,454
Cadwgan, T. C., Anderson, Ind., cotton planter 466,487
Campion, W., Brooklyn, N. Y., knitting mach 466,555
Carney, T., Dayton, O., cash indicator 466,710
Carson, J. B., Atlanta, Ga., speaking tube 466,652
Carver, J. W., Pawlet, Vt., firearms 466,599
Case, E. E., Noblesville, Ind., carpet stretcher 466,749
Casey, P., Pittsburg, Pa., graining mach 466,322
Cash, A. W., Bridgeport, Ct., typewriting mach 466,600
Chamberlin, C. C., Washington, Pa., wells 466,653
Charlton, W. J., Prov., R. I., engraving 466,534
Cheeseman, S. E., Kansas City, Mo., alloys 466,455
Clapp, W., Cohoes, N. Y., tree protector 466,654
Clark, R. W., Buffalo, N. Y., steam trap 466,324
Clark, W., Phila., Pa., manuf. water gas 466,323
Claus, H., Thale-in-the-Harz, Germany, enamel 466,325
Climenson, W. W., Honeybrook, Pa., pen holder 466,711
Cline, George J., Goshen, Ind., wrench 466,456
Coe, Daniel E., Darby, Pa., yarn 466,457
Cole, R., Shelby, Mich., sand band 466,326
Cook, David N., Salem, Mass., brake shoe 466,655
Cook, W. S., & M. C., Omaha, Neb., soldering iron 466,520
Cooke, E. W., Western Springs, Ill., tool holder 466,327
Corliss, G. F., & L. H. Wattles, Prov., governor 466,488
Covel, Milo, Chicago, fish trap 466,489
Covert, E., Farmer Village, N. Y., rope clamp 466,656
Cromwell, W. A., N. Y. City, exhaust head 466,657
Cumnock, R. L., & P. J. Marrs, Henderson, Ky., fire extinguisher 466,658
Currey, I. F., Flint, Mich., snow plow 466,328
Currie, S. C. C., Phila., Pa., chlorides 466,720
Curtis, T. H., Clev., Ohio, salting meats 466,659
Custer, W. F., Summitville, Ind., bolt holder 466,329
Darby, T. C., Chelmsford, E., cultivating land 466,663
Dare, Lee, Lagro, Ind., headstall 466,330
Davidson, J., Wick, Scotland, clock 466,712
Davis, Chas. E., Chicago, seal lock .... 466,[illegible]
Dawson, H. T., Salcombe, E., gas engine 466,331
Day, Sam. J., Burden, Kans., trough for poultry 466,397
De Long, A. P., Imlay City, Mich., typewriter 466,332
De Wolfe, E. R., N. Y. City, tire for bicycles 466,556
Dean, J. A., Worcester, Mass., rope grip 466,736
Delany, P. B., South Orange, N. J., battery 466,664
Demaurez, C., Greenville, Me., car coupling 466,713
Denton, R. A., & W. B., La Cygne, K's, letterbox 466,665
Dick, A. B., Chicago, copying app 466,557
Didisheim, A., Chaux-de-Fonds, S., stop watch 466,558
Dion, L. O., Natick, Mass., egg preserving app 466,333
Dodge, P. T., Wash., D. C., type casting mach 466,666
Doig, E. M., Denver, Colo., lubricator 466,737
Donnan, N. W., Amsterdam, N. Y., clothes line 466,458
Donohoe, W. F., Phila., Pa., shoe fastener 466,738
Drew, J. N., Malden, Mass., moving material 466,601
Drew, W. J., Gr'd Rapids, Mich., carpet sweeper 466,721
Dudley, A. W., St. Louis, Mo., hitching horses 466,667
Duggan, W. S., Verona, Tenn., plow 466,668
Dulin, C. E., Phila., Pa., centrifugal mach 466,459
Duncan, L., Balt., Md., hydraulic gear 466,660
Duncan, L., Balt., Md., hydraulic gear 466,661
Duncan, L., Balt., Md., hydraulic gear 466,662
Dutemple, W. R., Prov., R. I., rubber stamp 466,396
Eckels, G. M., Chicago, typewriting mach 466,490
Edgar, B., Sunbury, Pa., axle lubricator 466,399
Edison, T. A., Menlo Park, N. J., electrol. decomp 466,460
Edison, T. A., Llewellyn Park, & J. F. Ott, Newark, N. J., cut-out 466, 00
Eickhorst, C., & J. Idstein, Chicago, bridge gate 466,401
Ericksen, M., La Crosse, Wis., compressor 466,334
Erwin, F. B., Chicago, railway switch 466,491
Facer, W. E., Clev., O., cable telegraphy 466,492
Farmer, W. H., & T. White, Saginaw, Mich., switch 466,602
Faulkner, J. J., Memphis, T., cotton seed mach 466,669
Felldin, A., Auburn, N. Y., pianos 466,433
Fiesse, Chas., N. Y. City, gas producer 466,603
Finnegan, J., Phila., Pa., transom lifter 466,739
Fischer, B., Stuttgart, G., sewing mach 466,559
Fitts, W. L., San Jose, Cal., pipe coupling 466,521
Flagg, Thomas J., New York, shirt 466,335
Fler, J. K., Leavenworth, Kans., melon carrier 466,670
Frank, W. E., St. Louis, Mo., & O. S. Foster, Utica, N. Y., spring bed 466,535
Franklin, E. A., Brenham, Tex., liquid moving 466,336
Franzel, C., Domstadtl, A., sheller 466,402
Fries, John, N. Y. City, powder distributer 466,337
Frisbie, H. R., Bridgeport, Ct., steam whistle 466,403
Frisbie, H. R., Bridgeport, Ct., chime whistle 466,404
Fuller, G. C., Minneapolis, Minn., rein holder 466,405
Fuller, W. H., Passaic, N. J., camera 466,338
Fyles, F., N. Y. City, scenic effects 466,750
Gadberry, M., Leon, Kans., neck yoke 466,406
Galbreath, G. W., Sedalia, Mo., sash fastener 466,672
Gale, C. E., Northville, N. Y., churn 466,671
Gantt, J. Q. A., & J. D. Bloomhardt, Altoona, Pa., heater 466,673
Gardner, W., Gloucester, E., mixing mach 466,751
Garnsey, F. A., Southborough, Mass., looms 466,560
Gatgens, J. F. F., & R. C. Dowdin, Central House, Cal., weed puller 466,674