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Notes & Queries

HINTS TO CORRESPONDENTS.

Names and Address must accompany all letters or no attention will be paid thereto. This is for our information and not for publication.

References to former articles or answers should give date of paper and page or number of question.

Inquiries not answered in reasonable time should be repeated: correspondent will bear in mind that some answers require not a little research, and, though we endeavor to reply to all either by letter or in this department, each must take his turn.

Buyers wishing to purchase any article not advertised in our columns will be furnished with addresses of houses manufacturing or carrying the same.

Special Written Information on matters of personal rather than general interest cannot be expected without remuneration.

Scientific American Supplements referred to may be had at the office. Price 10 cents each.

Books referred to promptly supplied on receipt of price.

Minerals sent for examination should be distinctly marked or labeled.

(7534) J. T. asks: 1. Can a whistle be heard as well in a fog on the sea as in clear weather? A. There is much more in this question than the mere presence or absence of fog. Nor can a whistle be heard in clear weather equally well at all times. Both in foggy and in clear weather there is a great difference in the loudness with which a sound is heard at the same distance at one time and another. 2. Has there been anything done to overcome the difficulty, apart from the search lights? A. Sirens are used in thick weather, whose tones can be heard much farther than lights of any sort can be seen. 3. What distance can an ordinary whistle be heard? A. The distances at which an ordinary steam whistle can be heard are variously stated, for the reason that they vary very greatly. It is also true that a whistle may not be heard at a certain distance, while at a greater distance from it in the same direction it is distinctly heard. For the whole subject of soundless zones and the effect of fog, rain, snow, etc., upon sound, see Tyndall's "Sound," price $2 by mail.

(7535) E. W. K. writes: As a subscriber to your interesting paper, I would be glad to see in your columns the answers to these questions: 1. The 6 inch guns, like those of the "New Orleans," have about the same penetration at the muzzle as our 8-inch guns, and can fire over six times as often. Are they six times as powerful weapons? A. The blow struck by an 8-inch gun has much greater energy than that delivered by the 6-inch gun; but the rapidity of fire of the 6-inch gun renders the total energy of the projectiles delivered by the 6-inch gun much greater in a given time. 2. Is it certain destruction to a ship to be torpedoed? A. No. The subdivision of the hull of a ship may confine the flooding to certain portions of the hull, and prevent the ship from sinking. 3. Is the fact that the fire from guns cannot be directed to any particular part of an enemy's ship, except at short range, an argument in favor of light rapid-fire guns? A. We think it is, decidedly. The 8-inch rapid-firer is an ideal weapon, able to penetrate heavy armor and capable of rapid fire. 4. How are the "Maine," "Missouri," and "Ohio" to be armed and armored? A. We shall shortly publish an illustrated description of these ships. 5. Are their guns to be as high powered as those of the British ships? A. Probably more so. 6. How is it that the Brown gun, in sending its shots about one and a half times as fast as those of the 10-inch navy gun, develops over twice the energy? A. The energy, the weight remaining the same, varies as the square of the velocity. The 10-inch navy gun, it should be remembered, was designed a dozen years ago; the Brown gun is a modern weapon of more recent date.

(7536) G. M. T. writes: 1. I notice in your issue of October 29 of the SCIENTIFIC AMERICAN, under the article "Work of Naval Bureau of Ordnance," a statement to the effect that the Navy Department has adopted a smokeless powder made from soluble nitrocellulose by the Bureau's formula. Is the formula a secret of the Bureau or can you publish the same under your list of Notes and Queries? A. The formula is, we presume, for obvious reasons, a secret. 2. A second question I wish to ask is about the hardened plate for covering battleships. Can you inform your readers, through the same medium as above, how this plate is treated in the so-called "Harveyized" process? A. In the Harvey process the plate is placed in a furnace with only its face exposed. Carbonaceous material is then spread over the furnace, completely covering the face of the plate. After it has been subjected for a considerable length of time to a high temperature, during which the carbon penetrates the steel face, the plate is allowed to partly cool, after which the plate is uncovered and given an intense hardness by the application of cold water.

(7537) H. I. W. writes: I have a pair of plano-convex lenses of 5 inches diameter, 36 inches focus, and a Beck ¼ tintype lens, and I want to construct a lantern (for experimental purposes) like the one described on page 398, SCIENTIFIC AMERICAN, June 23, 1888, using acetylene gas as an illuminant. 1. What alterations will be necessary, if any, using the above mentioned material? A. No alterations will be necessary, except such as will adapt the lantern to the long focus of your condenser lenses. The usual focal length of a condenser for a lantern is 9 inches. Yours is 18 inches. You can arrange so as to move the lantern slide farther away from the condenser to a place where the cone of light is a little larger than the largest opening you will have in a slide. No changes are made necessary because acetylene is to be used. 2. Will the tintype lens have to have a rack and pinion for focusing? A. A rack and pinion is not essential. You can, in place of these, mount your lens on a board so arranged as to slide to and fro, thus securing the range of motion needed to focus on a screen at various distances from the lantern. 3. How far apart should the plano-convex lenses be placed? A. Place the condenser lenses close together. 4. Flat or curved sides together? A. The convex sides are to be toward each other. The plane sides are on the outer sides of the condenser. 5. How far from the front of condenser should the objective be placed? A. Determine the distance of the objective experimentally. It depends on its focal length and the distance of the screen. 6. How large a disk of light will 4½ foot burners make, using acetylene, at a distance of 30, 35 or 40 feet? A. The size of the disk does not depend on the light used, but on the focal length of the objective, which you have not given. You can easily find this out for yourself when you get the lantern made. 7. R ommend book on photomicrography, also on optical projection and optical lantern construction. A. We can recommend Clark's "Practical Methods in Microscopy," price $1.75; Wright's "Optical Projection," price $2.25; and "The Magic Lantern," price $1. You will, however, find all you need, and much on other subjects in science, in Hopkins' "Experimental Science," price $4.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

DECEMBER 13, 1898,

AND EACH BEARING THAT DATE.

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

Acetanilid, making, H. C. Fehrlin	615,829
Acetanilid, purifying, H. C. Fehrlin	615,828
Acids of asymmetric rhodamins, making sulfonic, H. Boedeker	615,791
Agricultural implement, combination, J. A. Lytle	615,726
Air pressure system, alternating, W. H. Barr	615,668
Animal trap, W. C. Hooker	615,851
Asphalt cutter, G. Hardy	615,698
Automatic heater and sterilizer, A. G. Waterhouse	615,932
Axle and adjustable sand band, vehicle, W. Z. Marsh	615,869
Axle lubricator, G. W. Butler	615,801
Axle turning machine, carriage, R. R. Spears	615,919
Bag. See Punching bag.	
Bag, W. T. Lane	615,720
Basket, W. T. Lane	615,721
Battery. See Diffusion battery.	
Bearing, ball, G. E. Mittinger, Jr	616,060
Bearing for electric motors, ball, J. M. Murphy	616,063
Bearing, roller, A. C. Brownell	615,675
Bearing, vehicle wheel, F. Day	615,683
Bed, O. S. & W. S. Foster	615,838
Bed, couch, E. R. Leighton	615,994
Bed, folding, F. M. Archer	616,048
Bed slat, J. W. Lowry	616,000
Bedbug exterminator, electrical, F. M. Archer	616,049
Bedstead fastening, A. H. Switzer	616,034
Beer or mineral water box, Laible & Fredrick	615,860
Bell clamp, bicycle, E. D. Rockwell	616,015
Bicycle, I. F. Randolph	615,901
Bicycle attachment, E. F. Batchelder	615,783
Bicycle brake, F. E. B. Beaumont	615,785
Bicycle carrier, F. B. Shackelton	615,756
Bicycle, chainless, C. H. Thomas	615,763
Bicycle frame, J. W. Wagner	615,768
Bicycle handle bar, W. A. Marbach	615,868
Bicycle handle bar hand grip, G. T. Bowman	615,793
Bicycle, land or water, R. Moller	615,871
Bicycle lock, M. Badoni	616,051
Bicycle steering gear, A. Doyle	615,961
Bicycle support, B. C. Leonard	615,995
Bicycle toe clip, H. J. Condell	615,679
Bicycle tubular joint, R. Felsche	615,976
Bill hook, H. D. Studabaker	615,921
Biscuit cutting apparatus, E. Carr	615,804
Blowpipe, H. Dock	615,960
Boat, submarine, R. Lincoln	615,866
Boats, construction and propulsion of, H. R. Shaw	615,757
Boiler. See Hot water boiler. Tubular boiler.	
Boiler check and blow-off cock, combined, W. McIntosh	615,881
Bolt clipper, P. Broadbooks	615,956
Book holder and leaf turner, R. K. McDonald	615,879
Boots, device for pulling off felt, O. W. Morley	615,872
Bottle, J. C. Bean	615,951
Bottle, J. L. Burton	615,800
Bottle caps, art of and apparatus for introducing and securing packing in, P. Lindemeyr	615,725
Bottle, non-refillable, J. H. McDonald	615,878
Bottle tray attachment, J. P. Robertson	616,013
Box covering and corner staying machine, Morgan & Jones	616,062
Braking device, F. H. Rice	615,803
Breast strap and bame connection, C. W. Fehring	615,827
Bridge, swivel draw, J. Edwards	615,824
Brush, G. B. Hussey	615,853
Brush, clothes, L. Frederitzi	615,839
Buffing and polishing roll or tool, E. Richardson	615,906
Bung branding machine, A. L. Neubert	616,006
Burner. See Gas burner. Pilot burner.	
Button or stud, H. M. Larter	616,057
Cabinet, kitchen, H. G. Day	615,684
Cabinet, kitchen, J. M. Gray	615,840
Calcium carbids, treating, J. A. Deuther	615,816
Calculating machine, W. H. Pike, Jr	615,895
Canopy supporter, E. Nugent	615,738
Car attachment, bar, C. H. Osborn	615,740
Car brake, G. W. Dickey	615,819
Car brake, A. J. O'Hara	615,739
Car, combined day and sleeping, W. T. Eastes	615,689
Car coupling, J. Cadwell	615,803
Car coupling, W. C. Shaw	615,916
Car coupling, G. C. Thompson	615,925
Car coupling, automatic, M. M. Pettes	615,742
Car fender, M. F. Field	615,977
Car, hand, M. B. Schaffer	615,753
Car hand strap, E. P. Hendrickson	615,986
Car wheel, C. P. Smith	616,024
Car wheel and track brake, railway, R. Shultz	615,917
Cars, electric lighting apparatus for railway, W. F. Richards	615,904, 615,905
Carriage and cradle, combined baby, L. Payette	615,892
Carriage gear, W. J. Brown	615,797
Carrier. See Bicycle carrier.	
Carving machine, H. Marles	616,002
Case. See Glove case. Show case.	
Centrifugal machine, continuous, T. C aney	615,967
Chain, drive, J. Neil	615,882
Chain, sprocket, C. J. Cook	615,807
Chain winding or unwinding device, J. E. Stott	615,920
Cheval glass, W. F. Wagner	615,928
Chin rest and modulator, combined, Harlan & Mullin	615,848
Churn, W. T. Burroughs	615,676
Clamp. See Bell clamp. Dental rubber dam clamp.	
Clothes hanger, W. P. Smith	613,918
Clothes line holder, C. L. Kraber	615,850
Cock, steam or water, R. Thompson	616,036
Coin freed apparatus, automatic, A. E. T. Dallmer	615,682
Coke oven, horizontal, A. Hussener et al	615,709
Collar and cuff dampening apparatus, F. H. Harriman	615,983
Collar, pneumatic horse, J. E. Richardson	615,747
Collar stuffer, horse, S. H. Randall	615,746
Condenser, L. Schutte	615,914
Contents of vessels beneath the surface of liquid therein contained, device for keeping, A. & A. Schenck	615,754
Conveyer, A. H. Richner	615,748
Cooker, feed, D. Ford	615,836
Cooking utensil, M. F. Brown	615,957
Cork extractor, W. A. Williamson	615,938
Cot, hammock, and stretcher, combined, C. V. Richey	615,907
Coupling. See Car coupling. Pipe coupling. Thill coupling.	
Course indicator, great circle, S. R. Kirby	615,857
Crane, A. Thomlinson	615,924
Cue rack, J. Dockstader	615,821
Cultivator frame, M. & C. Zollner	615,773
Current generator, alternating, C. S. Bradley	615,952
Current motors, controlling alternating, C. S. Bradley	615,953
Currents, changing period and phase of alternating, C. S. Bradley	615,954
Curtain pole and shade bracket, J. Powell	615,898
Cutter. See Asphalt cutter.	
Cutter, C. K. Hostetter	615,988
Cycle driving back, E. B. Killen	615,715
Dental rubber dam clamp, adjustable, A. S. Cooper	615,808
Desk and seat, combined, A. D. Linn	615,867
Diffusion battery, J. Perichon	615,893
Disinfecting apparatus, P. Kirschen	615,858
Display card, J. F. Hills	615,702
Door check, J. Horsfield	615,707
Door hanger, R. B. Browne	615,674
Drill. See Grain drill.	
Drilling machine, percussive, P. J. Ogle	615,884
Dyers' use, oxidizing device for, O. Rothe	616,018
Egg tester, G. W. Preston	615,899
Electric machine, dynamo, W. M. Mordey	615,731, 615,732
Electric motor, J. L. Thoma	616,035
Electrical cables, manufacturing, S. Z. De Ferranti	615,691
Electrically transmitting power, method of and apparatus for, C. S. Bradley	615,673
Electroplating apparatus, J. E. & H. E. Hartley	615,699
Elevator and wagon dump, combination, F. Gahm	615,694
Embossing roller, J. Hofmeier	615,706
Engine. See Fluid pressure engine. Gas engine. Rotary engine. Steam engine.	
Engines, cooling means for explosive, G. C. Bracklow	615,672
Engraving and ruling machine, C. Schneider	615,755
Envelope machine, E. P. Waterhouse	615,931
Extractor. See Cork extractor.	
Fabric. See Plaited fabric.	
Fabric handling apparatus, H. K. Parry	615,890
Fastener socket member, separable, G. E. Adams	615,776
Faucet, G. T. Wilson	615,939
Faucet for drawing beer, etc., J. W. Zimmerman	615,774
Faucet for washbowls, W. C. Humphreys	615,852
Feed water heater and purifier, C. E. Ferreira	615,830
Fence machine, wire, P. M. Mishler	615,870
Fence, portable, Young & Cable	615,943
Fence post anchor, H. G. Thomson	615,938
Fence stay, wire, E. W. Cornell	615,998
Fence, transportable, A. Mauser	615,[illegible]
Fence, wire, R. Kennedy	615,[illegible]
Fence, waven wire, R. H. Bloomer	615,[illegible]
Fender. See Car fender. Fireplace fender.	
Filter and cooler, combined, W. G. Wuichet	615,941
Filter, siphon carbon faucet, P. Stone	616,[illegible]
Firealarm indicator, L. Le Baron	615,723
Fire escape, W. H. Logan	615,938, 615,939
Fire extinguisher, automatic, W. S. Langford	616,056
Fire to and from rooms, means of hindering spread of, C. C. Gilman	615,696
Fireplace fender, L. P. Legg	615,861
Fireproof door, shutter, etc., D. H. Ferguson	616,066
Fluid pressure engine, A. H. Crockford	615,810
Folding machine, F. H. Wendt	615,770
Furnace, H. E. Janes	615,710
Furnaces, etc., self dumping machine for blast, F. O. Miller	615,730
Fuse, time, Tirot & Guyot	616,039
Game apparatus, M. D. Dexter	615,818
Gas burner for stoves or heaters, M. K. Newton	615,737
Gas engine, A. A. Vansickle	615,766
Gas engine, explosive, Madlehner & Hamilton	616,059
Gas generator, acetylene, E. P. Gardner	615,979
Gas lighter, pneumatic, E. Knapp	615,717
Gas, method of and apparatus for manufacturing, V. B. Lewes	615,996
Gas, process of and apparatus for producing, V. B. Lewes	615,997
Gate. See Railway gate.	
Gate, R. N. Barger	615,950
Gate, W. Cross	616,054
Gate, W. A. Whitcomb	615,772
Gearing, F. G. D. Holmes	615,704
Generator. See Current generator. Gas generator.	
Glass. See Cheval glass.	
Glass mould, Rott & Steiner	615,910
Globe holder, F. M. Greenup	615,845
Glove case, S. Bodwell	615,780
Grain binder knotter, S. K. Dennis	615,815
Grain drill, P. P. Mast	615,727
Grain dump, portable, W. B. Leonard	615,862
Grinding mill, J. W. Cunningham	615,811
Grubbing machine, W. C. F. Zimmerman	615,945
Gudgeons to rollers, machine for applying, G. W. Packer	615,888
Guns, ejecting device for breakdown, W. H. Davenport	615,958
Guns in or out on shipboard, apparatus for running, Dawson & Buckham	615,959
Gutter former, Watrous & Riley	615,933
Hanger. See Clothes hanger. Door hanger. Picture hanger.	
Harrow, disk, M. W. Kouns	615,718
Harvester, grain, J. F. Steward	616,029
Hat, fur or wool, Zerffi & Riedel	615,994
Hay rack for farm wagons, S. H. Plomberg	616,003
Hay rake, J. W. Latimer	615,722
Headlight, electric arc, W. G. Wagenhals	615,927
Heater. See Automatic heater. Feed water heater.	
Heel trimming machine, A. McDowell	615,880
Hides or skins, liquid composition of matter for treating, H. Holmes	615,705
Hinge, A. C. Eschweiler	615,690
Hook. See Bill hook. Snap hook.	
Hot water boiler or tank, J. H. Stone	616,030
Hub for vehicle wheels, pneumatic, E. C. Smith	615,759
Hysteresis meter, J. L. W. Gill	615,695
Indicator. See Course indicator. Fire alarm indicator. Loom stop indicator.	
Insecticide solutions, apparatus for spraying, M. B. Drinkwalter	615,963

(Continued on page 414)