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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 This is for our information and not for publication.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.

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price.

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(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 any thing 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 rtain destruction to a ship to be tornedged? 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

(7537) H. I. W. writes: I have a pair of plano-convex lenses of 5 inches diameter, 36 inches focus, anda Beck 1/4 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 focallength and the distance of the screen. 6. How large a disk of light will 41/2 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 ge the lantern made. 7. R ommend book on photomicrography, also on optical projection and optical lan tern 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.

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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, making, H. C. Fehrlin Acetanilid, purifying, H. C. Fehrlin Acids of asymmetric rhodamins, making sulfonic, H. Boedeker Agricultural implement, combination, J. A. Lytle Air pressure system, alternating, W. H. Barr Animal trap, W. C. Hooker Asphalt cutter, G. Hardy Automatic heater and sterilizer, A. G. Waterhouse Axle and adjustable sand band, vehicle, W. Z. Marsh	615 828
Acide of seymmetric rhodemine, making sul-	010,020
fonia U Poodokor	615 701
Agricultural implement combination T A Lytla	615.796
Agricultural implement, combination, J. A. Lytic	615 660
Air pressure system, aiternating, w. H. Barr	010,000
Animai trap, w. C. Hooker	010.601
Asphalt cutter, G. Hardy	919,698
Automatic heater and sterilizer, A. G. Water-	
nouse	615,932
Axle and adjustable sand band, vehicle, W. Z.	
Marsh Axle lubricator, G. W. Butler. Axle turning machine, carriage, R. R. Spears	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.	
Bag. See Funching Bag. Bag. W. T. Lane. Basket, W. T. Lane. Battery. See Diffusion battery. Bearing, ball, G. E. Mittinger, Jr. Bearing for electric motors, ball, J. M. Murpby	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
Bearing, roller, A. C. Brownell. Bearing, vehicle wheel, F. Day Bed, O. S. & W. S. Foster. Bed, couch, E. R. Leighton.	615 994
Bed, folding, F. M. Archer Bed slat, J. W. Lowry Bedbug exterminator, electrical, F. M. Archer	616 048
Red slat J W Lowry	616 000
Redbug exterminator electrical F M Archer	616 049
Rodstood fostoning A H Switzer	616 034
Poor or minoral water how I sible & Fredrick	615 960
Boll clamp bicycle F D Rockwell	616 015
Rievela I F Randolph	615 001
Diavale attachment F F Vatchelder	615 793
Bedbug exterminator, electrical, F. M. Archer. Bedstead fastening, A. H. Switzer. Beer or mineral water box, Laible & Fredrick. Bell clamp, bicycle, E. D. Rockwell Bicycle, I. F. Randolph Bicycle attachment, E. F. Batchelder. Bicycle brake, F. E. B. Beaumont. Bicycle carrier. F. B. Shackelton. Bicycle chainless, C. H. Thomas. Bicycle frame, J. W. Wagner. Bicycle handle bar, W. A. Marbach. Bicycle handle bar hand grip, G. T. Bowman. Bicycle land or water. R. Moller.	615 795
Diardo comion La D Chadrolton	615 750
Biovolo chairless C H Thomas	615 762
Diarula frama I W Wagner	615 700
Biovolo handle han W. A. Marbach	615 669
Dierole handle han hand onin C. T. Domman	615 702
Dicycle nancie par nancigrip, G. 1. Downan	010,790
Bicycle, land or water, R. Moller	010,071
Biorgle steering good A Dorle	010,001
Provide steering gear, A. Doyle	010,901
Bicycle support, B. C. Leonard	010,990
Bicycle toe clip, H. J. Condell	010,079
Bill book II D Chadabakan	010,9(0
Bicycle, land or water, R. Moller. Bicycle, land or water, R. Moller. Bicycle lock, M. Badoni. Provide steering rear, A. Doyle. Bicycle support, B. C. Leonard. Bicycle toe clip, H. J. Condell. Bicycle tubular joint, R. Felsche. Bill book, H. D. Studabaker.	010,921
Biscuit cutting apparatus, E. Carr. Blowpipe, H. Dock. Boat, submarine, R. Lincoln. Boats, construction and propulsion of, H. R.	015,804
Blowpipe, H. Dock P. Lincoln	010,960
Doad, submarine, R. Lincoln	019'900
Boats, construction and propulsion of, H. R.	015 858
Биа. W	010,101
Boiler. See Hot water boiler. Tubular boiler.	
Boner check and blow-on cock, combined, W.	015 005
MCINTOSh	015,881
Boit clipper, P. Broadbooks	015, 956
Book noider 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 introduc-	
ing and securing packing in, P. Lindemeyr	615,725
Bottle, non-refillable, J. H. McDonald	615,878
Bottle tray attachment, J. P. Robertson	616,013
Boiler. See Hot water boiler. Tubular boiler. Boiler check and blow-off cock, combined, W. McIntosh. Bot clipper, P. Broadbooks. Book holder and leaf turner, R. K. McDonald. Boots, device for pulling off felt, O. W. Morley. Bottle, J. C. Bean. Bottle, J. L. Burton. Bottle caps, art of and apparatus for introducing and securing packing in, P. Lindemeyr. Bottle, non-refillable, J. H. McDonald. Bottle tray attachment, J. P. Robertson. Box covering and corner staying machine, Morgan & Jones.	
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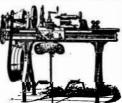
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ing. 615,827 Bridge, swivel draw J. Edwards. 615,824 Brush, G. B. Huss. 9. 615,839 Brush, clothes, L. Frederitzi. 615,639 Buffing and polishing roll or tool, E. Richardson. 615,939 Buffing and polishing roll or tool, E. Richardson. 615,936 Burner. See Gas burner. Pilot burner. 616,006 Burner. See Gas burner. Pilot burner. 616,006
Bump and poissing roll of tool, E. Richardson. 618,006 Bung branding machine, A. L. Neubert
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 615.880 Calcium carbids, treating, J. A. Deuther 615.816 Calculating machine, W. H. Pike, Jr. 615.895 Canony supporter F. Nugent. 615.738
Canopy supporter, E. Nugent. 615,738 Car attachment. box. C. H. Osborn. 615,740 Car brake, G. W. Dickey. 615,819
Car brake, A. J. O'Hara
Calculating machine. W. H. Pike, Jr. 615.895 Canopy supporter. E. Nugent. 615.738 Car prake. G. W. Dickey. 615.749 Car brake. G. W. Dickey. 615.819 Car prake. A. J. O'Hara. 615.739 Car, combined day and sleeping, W. T. Eastes. 615.639 Car coupling, J. Cadwell. 615.905 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. 615.753 Car, hand, M. B. Schaffer. 615.753 Car wheel, C. P. Smith. 616.024
Car, hand, bl. B. Schaller. 615.836 Car band strap, E. P. Heudrickson. 615.866 Car wheel, C. P. Smith. 616 (224 Car wheel and track brake, railway, R. Shultz. 615.917
Car, hand, M. B. Schaffer. 615.753 Car hand strap, E. P. Heustrickson. 615.986 Car wheel, C. P. Smith. 616 (24 Car wheel and track braks, railway, R. Shultz. 615,947 Cars, electric lighting apparatus for railway, W. F. Richards. 615,904, 615,905 Carriage and cradle, combined baby, L. Pavette. 615,892 Carriage gear, W. J. Brown. 615,797 Carrier. See Bioycle carrier. Carving machine, H. Marles. 616,002 Case. See Glove case. Show case. 616,002 Case. See Glove case. Show case. 615,967
Carrier. See Bicycle carrier. Carving machine, H. Marles. Case. See Glove case. Show case.
Case. See Grove case. Snow case. Centrifugal machine, continuous, T. C aney
Cheval glass, W. F. Wagner. 615 928 Chin rest and modulator, combined, Harlan & Mullin. 615.848
Mullin 615,848 Churn, W. T. Burroughs 615,676 Clamp. See Bell clamp. Dental rubber dam clamp. Clothes banger, W. P. Smith 615,918
clamp. Dentai rubber dam clamp. Dentai rubber dam clamp. Clothes banger, W. P. Smith 613,918 (Othes line holder, C. L. Kraber 615,879 (Ock, steam or water, R. Thompson 616,036 Coin freed apparatus, automatic, A. E. T. Dall-mer. 615,682
Collar and cuff dampening apparatus, F. H. Har-
Collar, pneumatic horse, J. E. Richardson 615,747
therein contained, device for keeping, A. & A. Schenck
A. Schenck. 615,754 Conveyer, A. H. Richner. 615,754 Cooker, feed, D. Ford. 615,836 Cooking utensil, M. F. Brown. 615,937 Cork extractor, W. A. Williamson. 615,938 Cot, hammock, and stretcher, combined, C. V. Richey. 615,907
Coupling. See Car coupling. Pipe coupling.
Course indicator, great circle, S. R. Kirby. 615,857 Crane, A. Thomlinson. 615,821 Cue rack, J. Dockstader. 615,821 Cultivator frame, M. & C. Zollner. 615,775 Current generator, alternating, C. S. Bradley 615,952 Current motors, controlling alternating, C. S. Bradley 615,952
Current generator, alternating, C. S. Bradley 615,952 Current motors, controlling alternating, C. S. Bradley 615,953 Currents changing period and phase of alternat.
Bradley
Cutter. See Asphalt cutter. Cutter, C. K. Hostetter Cycle driving back, E. B. Killen Dental rubber dam clamp, adjustable, A. S. Cooper. 615,808
Cooper 615,898 Desk and seat, combined. A. D. Linn 615,897 Diffusion battery, J. Perichon 615,893 Disinfecting apparatus, P. Kirschen 615,858 Display and J. F. Hille 615,600
Display card, J. E. Hills
Dyers'use, oxidizing device for, O. Rothe
Electric motor, J. L. Thoma
ranti. 615.691 Electrically transmitting power, method of and apparatus for, C. S. Bradley
Elevator and wagon dump, combination, F. Gahm. 615,694 Embossing roller. J. Hofmeier. 615,703 Engine. See Fluid pressure engine. Gas engine. Rotary engine. Steam engine. Engines, cooling means for explosive, G. C.
Rotary engine. Steam engine. Gas engine. Engines, cooling means for explosive, G. C. Bracklow
Bracklow 615.672 Bracklow 615.672 Envelope machine, E. P. Waterhouse 615.931 Extractor. See Cork extractor. Fabric. See Plaited fabric.
Fabric handling apparat us. H. K. Parry. 615.890 Fastener socket member, separable, G. E. Adams 615.776 Faucet, G. T. Wilson
Faucet for washbowls. W. C. Humphreys. 615.852 Feed water heater and purifier. C. E. Ferreira. 615.850 Fence machine, wire. P. M. Mishler 615.850
Extractor. See Cork extractor. Fabric. See Plaited fabric. Fabric handling apparatus, H. K. Parry
Fence, transportable. A. Mauser
Filter and cooler, combined, W. G. Wuichet
Fire extinguisher, automatic, W. S. Langford 616,056 Fire to and from rooms, means of hindering spread of, C. C. Gilman
Fireproof door, shutter, etc., D. H. Ferguson. 666-866 Fluid pressure engine, A. H. Crockford 615-810 Folding machine, F. H. Wendt. 615.70
Furnace, H. E. Janes
Game apparatus, M. D. Dexter
Gas, method of and apparatus for manufacturing, V. B. Lewes
Gate, R. N. Barger. 615,950 Gate, W. Cross 616,054 Gate, W. A. W bitcomb 615,772 Gate, W. A. W bitcomb 615,773
Generator. See Current generator, Gas genera- tor. 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. Dennia. 615.785
tor. Glass. See Cheval glass. Glass meuld. Rott & Steiner
Guns ejecting device for breakdown W H
Davenport. Guns in or out on shipboard, apparatus for run- ning, Dawson & Buckham 615,950 Gutter former. Watrous & Riley. 615,853 Haner See Uothes hanger. Door hanger.
Hanger. See Clothes hanger. Door hanger. Picture hanger. Harrow, disk, M. W. Kouns
Picture hanger. Boor hanger. Picture hanger. Harrow, disk, M. W. Kouns. Harvester, grain, J. F. Steward. 616-718 Hat, fur or wool, Zerffi & Riedel. Hay rackfor farm wagons, S. H. Plomberg. 616-089 Hay racke, J. W. Latimer. 615.722 Headlight, electric arc, W. G. Wagenhals. 615.727 Header. See Automatic beater. Feed water
nay rake, J. W. Latimer
Training and the second
Training and the second
Training and the second
Deater.

(Continued on page 414)

Holiday Suggestions

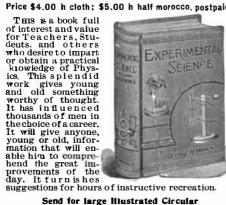
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414		6
Holiday Suggestions	Insulator for electric conductors, vacuum, J. A. Poche	84
MAGIC Stage Illusions and Scientific Diversions,	Journal box, ear axle, Lewis & Godwin. 615.72 Key fastener, T. J. Dickinson. 615.82 Lamp burner chimney holder, Pfeffer & Mayer. 616,02 Lamp, electric, W. S. Doe. 615.88 Last for shoes and standard for supporting same. F. J. Hruza. 615.98 Laundried articles, machine for smoothing edges of F. E. Fay. 615.97 Laundry dampening device, F. E. Fay. 615.97	9
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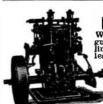
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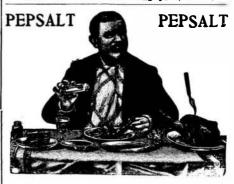
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