#### Business and Personal.

The charge for insertion under this head is One Dollar of each insertion; about eight words to a line Advertisements must be received at publication office as early as Thursday morning to appear in the follow-

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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 This is for our information and not for publication.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.

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

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Books referred to promptly supplied on receipt of price.

Minerals sent for examination should be distinctly

price.

Minerals sentior 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 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 sound less 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 Box covering and corner staying machine, Morgan & Jones.

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.

#### TO INVENTORS.

An experience of fifty years, and the preparation of more than one hundred thousand applications for patents at home and abroad, enable us to understand the laws and practice on both continents, and to possess unequaled facilities for procuring patents everywhere A synopsis of the patent laws of the United States and all foreign countries may be had on application, and persons contemplating the securing of patents, either at home or abroad, are invited to write to this office for prices, which are low, in accordance with the times and our extensive facilities for conducting the business, Address MUNN & CO., office Scientific American, 361 Broadway, New York.

#### 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.

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ı	fonic, H. Boedeker	615,791
l	Air pressure system, alternating, W. H. Barr	010,120
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1	Box covering and corner staying machine, Mor-	

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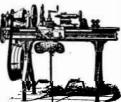
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