

Business and Personal.

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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 This is for our information and not for publication.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; correspondents 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.
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Minerals sent for examination should be distinctly marked or labeled.

(6663) J. W. D. asks: In a tug of war ten men of equal strength are pulling upon each end of a rope. Is the strain upon the center of the rope equal to the pulling power of the men at one end or both ends of the rope? A. One of the laws of mechanics, is, that antagonistic forces balance each other in proportion to their value. They are therefore not cumulative and cannot produce a greater strain in the connecting medium than is due to the greater of the forces.

(6664) E. J. T. writes: The walls of our church are built of brick, thirteen inches thick, rough cast with mortar on outside and plastered on inside. The inside walls are frescoed. When we have several days' rain the dampness goes through the walls, and thus ruins the frescoing. Can you give us any receipt for a preparation to go on the outside of the walls to prevent this? A. The best treatment of the outside surface of your church walls is to give it a thorough coat of boiled linseed oil, brushed on, and left for a few days to dry. Then if the color is objectionable, paint with any desired color.

(6665) W. M. B. says: Please inform me through your columns the necessary area of a parachute to support a man who weighs 200 pounds. A. The size or area of a parachute for dropping to the earth depends upon the velocity at which a person can land with safety. For 200 pounds at the rate of 5 miles per hour an area of 1,600 square feet, or about 45 feet diameter, will be required for the necessary resistance to the air at that speed. If a landing can be safely made at a velocity of 5 miles, or about 11 feet per second, an area of 615 square feet, or only 28 feet diameter, will be required. Parachutes should be umbrella shaped, as that shape affords the greatest resistance.

(6666) J. W. W., Manheim, Pa., asks: What is the present greatest elongation, east and west, of the north star? Its declination and azimuth compared with true meridian and variation of the compass, whether east or west? And, also, whether this variation is increasing or decreasing? A. The elongation of Polaris for the present year for the fortieth parallel is 1° 38' 1/2", with a yearly decrease of four-tenths of a minute. Polaris is on the meridian when Mizar, the second star from the end in the handle of the Dipper, is vertical with it, and is above the pole when the Dipper is below, or Polaris is on the farther side of the true pole from Mizar. The variation of the magnetic needle at your place for this year is about 5° 30' west, increasing about four minutes per year.

TO INVENTORS.
An experience of nearly 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 unequalled 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

November 19, 1895,

AND EACH BEARING THAT DATE

(See note at end of list about copies of these patents.)

Table listing inventions with names of inventors and patent numbers. Includes items like 'Adjustable screen, G. A. Bausman', 'Animal shears, F. Oakes', 'Book holder, Kullberg & Brunsell', etc.

Table listing inventions with names of inventors and patent numbers. Includes items like 'Gold extracting apparatus, A. L. Eltonhead', 'Grain binder, A. Stark', 'Great bar, J. E. Casey', etc.

Table listing inventions with names of inventors and patent numbers. Includes items like 'Steam or hot water heater, M. Valva', 'Steering apparatus, J. Johannsen', 'Steering gear, electrical, F. & L. H. Dyer', etc.

TRADE MARKS.

Table listing trade marks with names of companies and patent numbers. Includes items like 'Baking powder, J. D. & R. S. Christian Company', 'Alum Company', 'Bicycles and attachments, Betts Patent Head Light Company', etc.

DESIGNS.

Table listing designs with names of inventors and patent numbers. Includes items like 'Boxes, ornamental pattern for cigar, S. D. George', 'Brush back, etc., P. O. Dickinson', 'Cars, draught arm for railway, T. B. Kirby', etc.