

Business and Personal.

The charge for insertion under this head is One Dollar a line for each insertion; about eight words to a line.

Marine Iron Works. Chicago. Catalogue free. For mining engines. J. S. Mundy, Newark, N. J. "U. S." Metal Polish. Indianapolis. Samples free.

Send for new and complete catalogue of Scientific and other Books for sale by Munn & Co., 361 Broadway, New York. Free on application.

Notes & Queries

HINTS TO CORRESPONDENTS. Names and Address must accompany all letters or no attention will be paid thereto.

(7463) W. V. asks: 1. Can the same length of spark be obtained in the induction coil of SUPPLEMENT, No. 160, by using No. 30 or 31 single cotton covered wire instead of No. 36?

(7464) S. E. writes: Please send me a SUPPLEMENT containing an article on the prevention of creeping salts in a salammioniac battery.

(7465) W. G. R. asks: Have you any book or books giving a full explanation of differential arc light system?

INDEX OF INVENTIONS For which Letters Patent of the United States were Granted JULY 5, 1898, AND EACH BEARING THAT DATE.

(See note at end of list about copies of these patents.) Air brake, M. Corrington. 606,708 Air brake, F. L. Guillemet. 606,712 Air compressor, hydraulic, Noack & Grossman. 606,732, 606,733

Advertisements.

ORDINARY RATES. Inside Page, each insertion, - 75 cents a line Back Page, each insertion, - \$1.00 a line

WOOD of METAL WORKERS without steam power can save time and money by using our Foot and Hand Power Machinery

AMERICAN PATENTS.—AN INTERESTING and valuable table showing the number of patents granted for the various subjects upon which petitions have been filed from the beginning down to December 31, 1894.

POWER & FOOT LATHES. SHAPERS, PLANERS, DRILLS MACHINE SHOP OUTFITS, TOOLS AND SUPPLIES. CATALOGUE FREE

MACHINE DESIGN, Mech. Drawing, Mech. and Electrical Engineering, Taught at Your Home for \$2 Per Month.

Pipefitters! Your Kit is not complete unless it includes the famous STILLSON WRENCH

ROUND OR SQUARE BASE SKINNER Improved PLANEER CHUCK. Heavy, strong, accurately made.

ARMSTRONG'S PIPE THREADING AND CUTTING-OFF MACHINES Both Hand and Power. Sizes 1 to 6 inches.

TRANSITS AND LEVELING INSTRUMENTS. NEW ADJUSTABLE BENCH LEVEL Bottoms ground true. Vials ground and graduated.

The MIDGET Smallest Generator Out. Weighs 3/4 lbs. Will light our 6 c. p. lamp.

SUB-PRESS PUNCHES AND DIES We make to order drawings or models blanking, shaving and swaging dies, either simple or compound, for work requiring accuracy and finish.

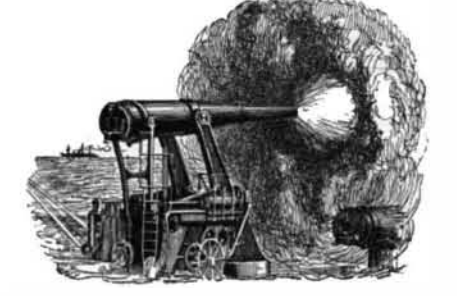
Oster Pat. Adjustable Stocks & Dies They are light in weight, dies made of the best tool steel, guaranteed just as strong and reliable as solid dies.

SIGNALING THROUGH SPACE without wires.—An article by W. Prece, describing the new Marconi system of telegraphing without wires.

Table listing various mechanical and electrical items with their corresponding page numbers. Includes items like Basket, A. Biggs, Jr., Bed bottom, spring, Peugh & Frazer, Bicycle, J. H. Berry, Bicycle, C. T. & W. B. Burgess, etc.

WILLIAMS' SHAVING STICK PURE AS THE LILY Williams' Soap sold everywhere, but sent by mail if your dealer does not supply you.

THE Scientific American ARMY AND COAST DEFENCE SUPPLEMENT.



10-INCH GUN ON DISAPPEARING GUN CARRIAGE. GUNS, ARMOR AND FORTIFICATIONS.

In response to numerous requests for detailed information regarding our Coast Defences, we have just published a special edition of the SCIENTIFIC AMERICAN SUPPLEMENT under the above title as complementary to our recent "Navy" issue.