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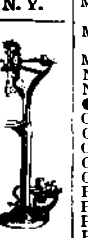
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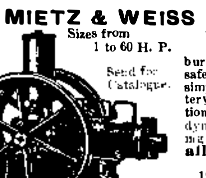
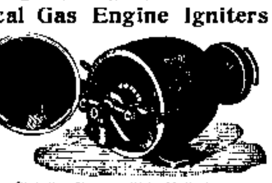
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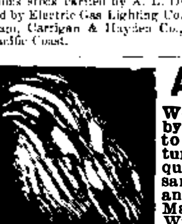
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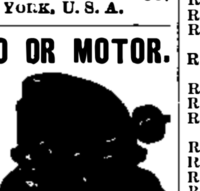
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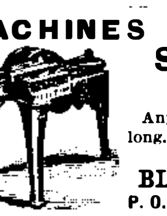
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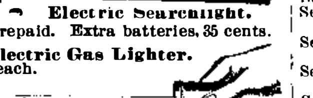

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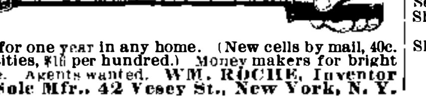
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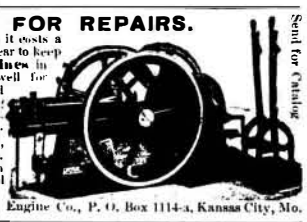

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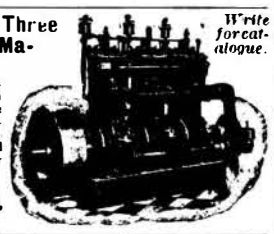

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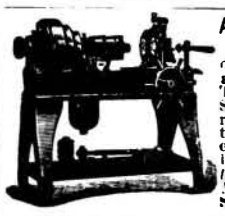

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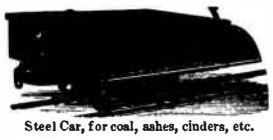

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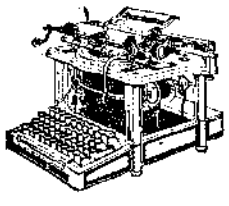

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Underwear and hosiery, woven and knitted, G. W. Schlichten 38,978
Watches and watch movements, H. F. Hahn & Co. 38,974

LABELS.

"Battle," for coffee, Southern Coffee Co. 9,476
"Italy Brand," for olive oil, Parodi, Erminio & Co. 9,477
"Pine Needle Toilet Powder," for toilet powder, F. K. Hickok 9,478
"Red Lion Stomach Bitters," for stomach bitters, Stein Brothers 9,481
"Rosaderma," for complexion compound, E. W. Rose 9,479
"Star Five Cent Concentrated Horse Food," for horse food, Rudolph & Huber 9,475
"Uncle Sam Did It! Can You?" for a puzzle, L. F. Jordan 9,474
"X-Ray Stove Polish," for stove polish, Blazer Manufacturing Co. 9,480

PRINTS.

"Table Tennis," for table tennis, Gray Lithograph Co. 560
"The First Over the Bars, Hunter Baltimore Rye," for whisky, W. Lanahan & Son 559
"Uncle Sam Suspenders," for suspenders, Consolidated Manhattan Suspender Co. 561

A printed copy of the specification and drawing of any patent in the foregoing list, or any patent in print issued since 1863, will be furnished from this office for 10 cents, provided the name and number of the patent desired and the date be given. Address Munn & Co., 361 Broadway, New York.

Canadian patents may now be obtained by the inventors for any of the inventions named in the foregoing list. For terms and further particulars address Munn & Co., 361 Broadway, New York.

Notes and 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; 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.
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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.

(8720) J. L. B. asks: 1. What battery shall I use, and how many cells of the same, to light two 8 candle power lamps of 8 volts and 2 amperes? A. Five cells of the plunging bichromate battery will light two 8-volt 2-ampere lamps. The battery is described in SCIENTIFIC AMERICAN SUPPLEMENT No. 792. 2. Why is the magnet in a telephone receiver permanent? A. The magnet in a telephone is permanent in order to furnish the field of force which causes the current in the transmitter to vary with the vibrations of the diaphragm. An electro-magnet would be more expensive and difficult to maintain. 3. What is the difference in construction of a direct current and an alternating current motor? A. A direct-current motor has a commutator, an alternating-current motor has rings to receive the current. The windings of the alternating-current motor are designed for the forms of current, as single or multiphase, while in some forms there is only one set of windings. To learn all the points of difference you should study the books on the subject. A good general work on electricity is Thompson's Lessons.

(8721) C. T. M. asks: What is meant by a twenty per cent grade? A. A twenty per cent grade rises or falls 20 feet for every 100 feet measured horizontally and not on the slope. In other words, the grade is measured by the tangent of the angle of inclination and not by its sine, so that a 100 per cent grade corresponds to an inclination of 45 deg. and not to an inclination of 90 deg. A slope, as of an embankment, is usually designated as of so many to 1; for instance, the usual slope of earthwork is 1½ to 1, meaning 1½ horizontal to 1 vertical. But, conversely, the grade of a road is sometimes given as of 1 in so many, meaning a rise or fall of 1 foot vertically for so many feet measured horizontally; for instance, a grade of 1 in 20 would be a 5 per cent grade and of 1 in 5 would be a 20 per cent grade. You will find such matters explained in Trautwine's "Civil Engineer's Pocke

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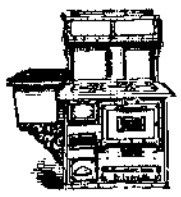

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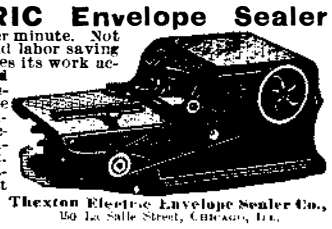

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