

Scientific American.

ESTABLISHED 1845.

MUNN & CO., Editors and Proprietors.

PUBLISHED WEEKLY AT

No. 361 BROADWAY, NEW YORK.

O. D. MUNN.

A. E. BEACH.

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One copy, one year, for the U. S. or Canada..... \$3 00
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Address MUNN & CO., 361 Broadway, corner of Franklin Street, New York.

NEW YORK, SATURDAY, DECEMBER 31, 1887.

Contents.

(Illustrated articles are marked with an asterisk.)

Table listing various articles such as Aluminum bronze for cannons, Lake freight, Metallic derivatives of acetyl- acetone, etc., with corresponding page numbers.

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For the Week Ending December 31, 1887.

Price 10 cents. For sale by all newsdealers.

Table listing sections I through VII, including ARBORICULTURE, CHEMISTRY, ELECTRICITY, ENGINEERING, MINERALOGY, MISCELLANEOUS, and TECHNOLOGY, with detailed descriptions and page numbers.

NAPHTHA EXPLOSIONS IN ROCHESTER AND JERSEY CITY.

A very serious explosion, due to an escape of naphtha, took place in Rochester, N. Y., on December 21. The Municipal Gas Light Company of that city uses one of the modern gas making processes, in which naphtha is employed for enriching the gas.

A leak has been found in the pipes near the Atkinson Street sewer. This is thought insufficient to account for the extent of the disaster, and the whole line will be tested by hydrostatic pressure.

Immediately following the news of this occurrence comes the tidings of another similar accident, though, fortunately, of far less extent. In the office of the Jersey City Gas Light Company, in Jersey City, N. J., a naphtha leak existed in the cellar.

These two accidents emphasize the need of extreme care in dealing with naphtha. It is more dangerous than gas, because when a leak occurs it takes far longer for the last traces to disappear.

In this city vast quantities are used, probably over a thousand barrels a day in the gas works alone. But, fortunately, these establishments are all situated on the edge of the water.

POSITION OF THE PLANETS IN JANUARY.

VENUS

is morning star. An interesting event in her course occurs on the 2d, at 11 h. A. M. She is then in conjunction with Jupiter, the planets being only 1° 51' apart.

JUPITER

is morning star. He signalizes his progress in the sky during the month by his meeting with Venus on the 2d. He makes also a close conjunction with Beta Scorpil on the 24th, at 6 h. P. M., being at that time only 8' south of the star.

SATURN

is morning star until the 23d, and then evening star. On the 23d, at 9 h. A. M., he is in opposition with the sun. He is then at his nearest point to the earth, and is visible under the most favorable conditions, rising at sunset and continuing above the horizon all night.

MARS

is morning star. On the 5th, at 7 h. A. M., he is in quadrature with the sun, rising at that time about midnight, and is easily visible as a small ruddy star, northwest of Spica.

in conjunction with Uranus, being 1° 10' north. Mars rises on the 1st at 0 h. 15 m. A. M. He rises on the 31st at 11 h. 13 m. P. M. His diameter on the 1st is 74', and he is in the constellation Virgo.

MERCURY

is morning star until the 18th, and then evening star. He is in superior conjunction with the sun on the 18th, at 3 h. P. M., passing beyond the sun, and changing from his western to his eastern side.

URANUS

is morning star. On the 7th, at 7 h. P. M., he is in quadrature with the sun. Uranus rises on the 1st at 0 h. 37 m. A. M. On the 31st he rises at 10 h. 35 m. P. M. His diameter is 3'6", and he is in the constellation Virgo.

NEPTUNE

is evening star. He sets on the 1st at 4 h. 4 m. A. M. On the 31st he sets at 2 h. 4 m. A. M. His diameter on the 1st is 2'6", and he is in the constellation Taurus.

At the close of the month, Mars, Uranus, Jupiter, and Venus are morning stars. Neptune, Mercury, and Saturn are evening stars.

Saved by the Scientific American.

Mr. J. J. Stranahan is the editor of the Exponent, a bright paper published at Chagrin Falls, Ohio. In a recent issue of his journal he gives the following:

"Those wishing to be well up in scientific and mechanical matters cannot afford to be without the SCIENTIFIC AMERICAN. It has been a constant visitor at our sanctum for fourteen years, and the other half of our family says that it is nip and tuck between the Bible and the SCIENTIFIC AMERICAN so far as we are concerned.

Mr. Stranahan further states that the facts above given are true to the letter.

Artificial Silk.

The author dissolves 3 grms. of nitro-cellulose in 100 to 150 c. c. of a mixture of equal parts of alcohol and ether. He adds 2.5 c. c. of a filtered solution at one-tenth of the dry ferrous chloride of commerce in alcohol; or of stannous chloride, and further 1.5 c. c. of a solution of tannic acid in alcohol.

How to Invest Nine Dollars.

By remitting \$9 for the SCIENTIFIC AMERICAN, SCIENTIFIC AMERICAN SUPPLEMENT, and the ARCHITECT AND BUILDERS EDITION of the SCIENTIFIC AMERICAN for 1888, the subscriber will surely have the latest and best scientific, engineering, mechanical, architectural, and building information to be had, and it is only in these three publications that a great deal of the information they will contain can be had at all.

The number of engravings of new inventions, engineering works, scientific experiments, the elevation and plans of new buildings, etc., which have appeared in the three editions of the SCIENTIFIC AMERICAN during the year just closing reaches the large number of twenty-eight hundred and forty-nine.