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Contents.

(Illustrated articles are marked with an asterisk.)

Table listing various articles such as 'Air pump governor, improved', 'Life saving apparatus for use at fires', 'Lock and alarm combination', etc., with corresponding page numbers.

TABLE OF CONTENTS OF SCIENTIFIC AMERICAN SUPPLEMENT No. 641.

For the Week Ending April 14, 1888.

Price 10 cents. For sale by all newsdealers.

Table listing sections like 'I. ASTRONOMY.—The Lunar Eclipse of January Twenty-eighth', 'II. CHEMISTRY.—Explosion of Hydrogen and Oxygen by Electrolysis', etc., with page numbers.

A VENETIAN SHIP RAILWAY.

An interesting achievement of the fifteenth century was recently described by Mr. E. L. Corthell before the Engineers' Club of Philadelphia. Brescia, an inland city of immense strength, was besieged by the Milanese. Upon Lake Garda near it were the fleets of the besieging forces. About a hundred miles distant was Venice, apparently unable to cope with the problem of relieving Brescia.

THE CELESTIAL WORLD.

A NOTEWORTHY COLLECTION OF PLANETS AND STARS NOW VISIBLE.—Four planets and four bright stars may now be seen near the ecliptic or sun's path in the heavens, the broad curve almost spanning the sky. The planets are Jupiter, Mars, Uranus, and Saturn.

An observer who would see the celestial exhibition must command an unobstructed view of the sky from the southeast to the northwest horizon. If he commences his observations about the middle of April, at half-past nine o'clock in the evening on a clear night, he will find a radiant star looming above the southeastern horizon. This is Jupiter, the prince of planets, the largest and brightest of the 3,000 stars visible in the firmament.

If now the observer glance to the northwest of the first group, near the meridian, he will see a large white star with a silvery tint. This is Spica, the leading brilliant of Virgo, while northwest of Spica and near to it gleams the red planet Mars, superb in tone, tint, and martial aspect, having just passed opposition.

The planet Saturn forms the eighth and last star in the curve. He is the first bright star northwest of Regulus, shining with a soft, serene light that distinguishes him from a fixed star, and following in the wake of the twin stars Castor and Pollux, who are still

farther northwest. Saturn will set in the middle of the month about half past 1 o'clock in the morning, and until that time the eight stars and planets will remain an unbroken curve. The order of observation may be reversed, beginning with Saturn and ending with Antares. The fixed stars apparently never change their places. The planets are always on the move, thus adding variety to the celestial pictures that on clear nights reward the upturned gaze.

THE OPPOSITION OF MARS.—On the 11th of April, at 1 o'clock in the morning, Mars is in opposition with the sun, "opposite" to him in the heavens, rising at sunset, and is in a straight line with the earth and sun, the earth being in the middle. The epoch is most interesting to terrestrial observers, for, if anything of importance is learned about our brother planet, the discovery will probably be made when he is in opposition, or nearest to the earth.

An opposition under similar favorable conditions will occur in 1892, when Mars may be said to have completed a 15 year cycle, and come round to a point where he is about as near to us as possible, or 35,000,000 miles distant. The ellipticity of the orbits of the earth and Mars accounts for the varying distance of the planets at different oppositions.

Meantime the opposition of 1888, if not the best, is better than that of 1886. Mars is near enough for us to see his moons, his divisions of land and water, the clouds that float in his atmosphere, his snowy pole, his curious double canals, and bright spots.

A somewhat startling coincidence has been noticed by a correspondent of L'Astronomie between the Martian canals and the lunar circle of Plato. The writer says a marked resemblance exists between the drawing of the canals of Mars made by Schiaparelli, of Milan, and the drawings of the lunar circle of Plato made by Stanley Williams, of England.

The Human Breath.

Professor Brown-Sequard has recently been making experiments to determine whether the human breath was capable of producing any poisonous effects. From the condensed watery vapor of the expired air he obtained a poisonous liquid, which, when injected under the skin of rabbits, produced almost immediate death.

SQUIRE WHIPPLE, the well known civil engineer and authority on iron bridge construction, died on the 15th of March, at his residence in Albany, after a brief illness, in the 84th year of his age.