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DISAPPEARANCE OF ENERGY.

A correspondent writes: "It is a well known law that energy is indestructible, but a case came to my notice a short time ago in which it is hard to tell in what form the energy appears. A metal spring is placed under tension, and while in this state is fastened and placed in acid until it is completely dissolved. What becomes of the energy stored up in the spring? Is it turned into heat, and if so, how?"

Perhaps some of our readers will give their views in reply to this interesting query.

GOOD DOCTRINE IN REGARD TO PATENTS.

In a recent case of appeal from the examiner to the Commissioner of Patents, the complaint of the inventor was that the examiner objected unnecessarily to the language used in the claims, and thus obstructed and delayed his application. The majority of the examining officers very properly interpret their duty as laying in the direction of facilitating the inventor in obtaining his patent, but in some of the rooms in the Patent Office a contrary theory sometimes seems to prevail, and occasionally the practice is such that it looks as if the examiner considered his special function to quibble over words, even to the extent of delaying or defeating the inventor.

In the case above referred to, ex parte Pacholder, Mr. Commissioner Mitchell lays down very clearly the rules which should govern the Patent Office. Among other rulings he holds as follows:

"No general rule can be laid down for governing the employment in the claims of patents of such words as 'means,' 'mechanism,' and 'appliances.' It is the object of the law, as it is the solicitude of this office, to protect inventors and guard their inventions. This object is best secured in the case of patents which represent the maturity of an art by taking care that claims shall be drawn with all reasonable restrictions, so that they shall be valid in spite of everything that is contained in existing patents and of everything previously known or used."

"In the case of patents which represent the infancy of an art or the stage of its earliest practical development, this office is solicitous that the inventor should be accorded a breadth of claim which is commensurate with the extent and importance of the invention which he desires and is entitled to protect. While the office will insist upon as much definiteness in the language of the claim as the statute calls for, it will also, if it properly discharge its function as the protector of the inventor, leave something to the salutary and benignant agency of construction in the courts."

"There is a permissible latitude of choice in the use of language which may be safely accorded to the inventor or his solicitor without violating the statute, and without detriment to that branch of the public service which has for its object not only to grant letters patent for new inventions, but to grant them at the earliest possible date."

POSITION OF THE PLANETS IN JULY.

JUPITER.

is morning star until the 30th, and then becomes evening star. He takes the lead in the planetary honors of the month, for just before it closes he reaches the epoch in his course when the culmination of his size and brilliancy occurs. This important event is his opposition with the sun, which takes place on the 30th, at 7 h. 34 m. A. M. Jupiter in opposition is superb, as with majestic mien he traverses his celestial pathway, being visible the entire night. The midsummer starlit nights will owe their chief attraction to the beaming presence of this regal planet, rising soon after sunset, reaching the meridian near midnight, and fading away in the light of the approaching sun.

Jupiter rises on the 1st at 9 h. 14 m. P. M. On the 31st he sets at 4 h. 45 m. A. M. His diameter on the 1st is 44".8, and he is in the constellation Capricornus.

VENUS

is evening star. She shines with increasing brilliancy for two hours after sunset. The two brightest stars in the firmament, Venus and Jupiter, are visible at the same time for about an hour on the last week of the month, the former holding her court in the west and the latter holding his court in the east. Venus and Saturn make a close conjunction on the 17th, at 11 h. 36 m. A. M., Venus being 6' south. The planets are invisible at conjunction, but will be near neighbors on the evening of the 17th. Their approach, meeting, and passing will be worthy of observation.

Venus sets on the 1st at 9 h. 29 m. P. M. On the 31st she sets at 8 h. 56 m. P. M. Her diameter on the 1st is 13".2, and she is in the constellation Cancer.

SATURN

is evening star. He will be about 5° east of Regulus when the month closes, the increasing distance between planet and star being plainly discernible. His vicinity to Venus is the most interesting feature of his course in July. His period of visibility closes after this month.

Saturn sets on the 1st at 10 h. 15 m. P. M. On the

31st he sets at 8 h. 26 m. P. M. His diameter on the 1st is 15".8, and he is in the constellation Leo.

MARS

is evening star. He is stationary on the 4th, and then commences to move eastward, passing south of Beta Scorpii on the 30th, being at the same time about 5° west of Antares. Jupiter, Venus, Mars, and Saturn may be seen during the first half of the month shining in the evening sky, from the time when it is dark enough for the stars to appear until Venus sets.

Mars sets on the 1st at 1 h. 31 m. A. M. On the 31st he sets at 11 h. 47 m. P. M. His diameter on the 1st is 19", and he is in the constellation Scorpio.

MERCURY

is morning star until the 22d, and then evening star. He is in superior conjunction with the sun on the 22d, at 5 h. 19 m. P. M. He is in perihelion on the 15th, when, if Schiaparelli's theory that he turns only once on his axis during a revolution round the sun be confirmed, portions of his surface are subjected to a heat more than ten times greater than the earth receives at the summer solstice from a sun that never sets.

Mercury rises on the 1st at 3 h. 15 m. A. M. On the 31st he sets at 7 h. 43 m. P. M. His diameter on the 1st is 6".6, and he is in the constellation Taurus.

URANUS

is evening star. He is in quadrature with the sun on the 15th, at 1 h. A. M., may still be found northeast of Spica, and is favorably situated for observation.

Uranus sets on the 1st at 0 h. 12 m. A. M. On the 31st he sets at 10 h. 14 m. P. M. His diameter on the 1st is 3".6, and he is in the constellation Virgo.

NEPTUNE

is morning star. He rises on the 1st at 2 h. 18 m. A. M. On the 31st he rises at 0 h. 23 m. A. M. His diameter on the 1st is 2".5, and he is in the constellation Taurus.

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

Curious Felting by Dermestids.

A correspondent of Insect Life writes to the editor of that journal as follows:

"I have in my possession a beautiful curiosity, and, as far as I can learn, the only one in existence. . . . It is an ordinary feather pillow tick, which was made of common bed ticking and filled with the domestic duck feathers about three years ago, and the pillow has been in general use about the house since that time. Of late the lady concluded to remove some of the feathers, as the pillow appeared too hard. Upon opening the tick, the feathers seemed to be ground up almost into a powder and unfit for further use; therefore they were emptied and the tick turned inside out, and instead of the goods being as when made, it was entirely covered with a fine growth of down, as evenly and thickly as the fur on a mole skin, which it very much resembles. It is firmly attached, the down breaking rather than pull off. Not a piece of the feather is attached to it, but as smooth as a piece of velvet, even the seams are covered by the growth. Not an insect can be found in the feathers, but the grinding process was supposed to be done by some insect. The lady made several pillows at the same time and of the same feathers, but when these pillows were opened nothing was found but feathers as when made. This was found about a month ago, and the ladies through the country have opened many pillows, some as much as fifty years old, but no such thing can be found. To look at it, one would think it the hide of some animal, and would never imagine it to be a pillow tick, except by close inspection."

Upon this Dr. C. V. Riley comments as follows:

"Pillows in which this felting of the ticking occurs have been infested by one of the Dermestid beetles (in all of the cases with which I am familiar it has been Attagenus megatoma) whose work has resulted in the comminution of the feathers, and the felting results from the subsequent mechanical action. The small feather particles are barbed, . . . and whenever caught in a cotton fabric by their bases, become anchored in such a way that every movement of the pillow anchors them still further. The frequent shaking which pillows receive results ultimately in the formation of this plush-like surface. A similar bit of ticking was exhibited at the Philadelphia Academy of Natural Sciences, April 5, 1883, and elicited the information that one of the members had, some years previously, examined a similar material known to have been formed from the fragments of gull feathers, and that a cloak had been made from it which wore well."

Deep Coal Mine.

One of the deepest coal mines in the world is at St. Andre du Poirier, France, and yearly produces 300,000 tons of coal. The mine is worked with two shafts, one 2,952 ft. deep and the other 3,083. The latter shaft is now being deepened, and will soon reach the 4,000 ft. level. The remarkable feature in this deep mine is the comparative low temperature experienced, which seldom rises above 75 deg. Fah.