

EVERYDAY SCIENCE
Matters of Interest to Manufacturers,
Mechanic and Inventor.
**A NEW LABOR-
SAVING POOL TABLE**
Pretty Ballet Girls as Aids to the Study
Chemistry.
THE ADVANCE IN ELECTRIC LIGHTS

[WRITTEN FOR THE DISPATCH.]

Readers of THE DISPATCH who desire information on subjects relating to industrial development and progress in mechanical, civil and electrical engineering, as the sciences can have their queries answered through this column, which will be a permanent feature of the paper.

THE indications point to the general use of petroleum as fuel for many power stations. The advantages over coal are obvious, for outside of its economy, even at market prices, at the undeveloped state of the art of utilizing

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the study of organic chemistry more easy. Each ballet girl, he said, represented an atom.

At his command the lovely atoms grouped themselves in a variety of magnificent dances. The medical men realized that they were observing, by Dr. Hoffman's felicitous method, the construction and chemical constitution of various compounds and their reactions. The record of the congress declares that "the composition of benzene, and the formation of aniline and its derivations, were particularly applauded."

THE GAS companies are fast getting to realize that antagonism by them to the electric light is inimical to their own best interests, and there is a steady increase in the number of electric lighting plants which have been in-

the past six months, and it is pretty close to the fact that it pays a gas supply company to furnish electric light also to such patrons as the Gas Co. of New York City. The latter is now supplying a total of over 21,000 arc and 50,000 incandescent lights to their patrons, and in addition to the commodity they were originally supplied with.

Two obstacles now stand in the way of the universal use of the incandescent light. One is the want of an economical and efficient storage battery, and the other is the want of an incandescent lamp possessing longer life, freedom from blackening of globes and increased efficiency of power. When these obstacles are removed, the incandescent light will be much cheaper than gas. Over 90 per cent of the initial power supplied in incandescent lamps is lost in heat radiation. The light is so much brighter than gas light that it is given by the glow worm a light without heat.

All modern public edifices (as well as many private residences) are now equipped with the incandescent light. Undesired, however, the flameless rays of day and night gas or other illuminants must be used. When the gas is shut down the lights go out. Besides, the engine and dynamo must be run for one light as well as many hundreds. We see therefore, as a consequence, in nearly all cases provisions made for the use of gas as an auxiliary. The new gas storage battery will eliminate the gas entirely, and the batteries will be charged during the day for use at night or whenever desired. The modern storage battery consists of plates of lead, and peroxide of lead and dilute sulphuric acid, the action during the charging process being electro-chemical and not electro-magnetic as in the case of the dynamo, so that the plates, stream

A so called "dry battery" in which the chemicals are of a gelatinous consistency is being introduced in Germany, but the most promising battery is one in which the current for a minute glazes globules on the plates.

The electrodes consist of finely divided antiprotic lead, each atom of which is completely covered with spongy copper. Oxidation does not therefore take place under the action of the changing current, and the material is not chemically attacked, in all other forms of storage batteries. A strong and influential company has been organized to handle this style of cell.

whereby the balls as "pocketed" run down to a common receptacle, thus avoiding walking around the table from pocket to pocket as each player finishes. The balls roll into gravity grooves which are, of course, hidden from sight.

A PASSENGER coach now being built by the New York, Providence and Boston Railroad possesses the novel feature of an arched roof forming exactly a half of an ellipse, the rafters or "carlines," as master car builders call them, being made of iron.

A CHEMIST gives the following recipe of the solution used in the hand grenade fire extinguishers: "Take 20 grains of common salt

A PROCESS of engraving on glass and crystals by electricity has been communicated to the French Academy of Sciences by M. Plante. The plate to be engraved is covered with a concentrated solution of nitrate of potash and put in connection with one of the poles of the battery, and the design is traced out with a fine platinum point connected to the other pole. The results are said to be of marvelous delicacy.

with a thin film of collodion. The coating should be of course of uniform thickness. The collodion can be easily washed off with water and it softens the light and absorbs but a small portion of its brilliancy. Notwithstanding, of course, I strongly recommend a solution of salt, the crystals producing a very attractive diffusion of the light. A solution of salts of lead and tin is used in Berlin.

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In order to secure the traction necessary to propel trains up the steep grades in the mountainous districts of the Eastern and Western States, it is necessary to employ very large and heavy engines—in many cases two and more—entailing thereby very heavy expense. A mechanical engineer of Albany, N. Y., has

THE recent decision of the Commissioner of Patents, Mr. Benton J. Hall, which effectually clears the title of Alexander Graham Bell as the first inventor of the telephone in what is technically termed a "broad" sense, not only gives stability to all enterprises based upon patent rights, but had it been otherwise, the telephone monopoly for a further period of 15 years.

states that the Examiner of Interferences, the Examiner-in-Chief and his predecessor in office have held that a telephone constructed upon the make and break principle will not transmit articulate speech, and he dismisses the multitude of evidence and the affidavits of scientists of conceded authority who testify to the contrary by asking "Will such instruments speak in the mode pointed out by Bels and McDonough?" It is unquestioned that upon this one point the opposition depended most largely, and notwithstanding this decision, we have not heard the last of this much mooted question.

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