

"BATACLAN"—THE FRENCH ARMY HIGH-JUMPING HORSE.

Capt. Giraud, of the French colonial artillery, is the proud owner of a horse that has made a record for himself in France as a high jumper. "Bataclan," as the animal is called, is now about twelve years old. He was bought when he was but four years old, in Normandy, for only 1,100 francs (\$220).

"Bataclan" has a record of having cleared a hurdle 6 feet 7 inches without a rider. This is of course far below the American record, but is an interesting performance. The accompanying illustrations, reproduced from photographs lent by Armée et Marine, show how clever and tractable a performer "Bataclan" is. Last year he carried off the palm at Vichy, Clermont, and Nimes. Unfortunately, the exigencies of the service have prevented Capt. Giraud from entering "Bataclan" in many contests. It is likely, however, that the horse will take part in some of the coming contests in France.

An apparatus which is intended to occupy the place of the atmosphere, so far as concerns the necessary breathing to sustain life, has been invented by M. G. F. Joubert, late Professor of Chemistry at the Paris Ecole Polytechnique. The apparatus is specially intended for the use of divers, or for those whose occupation requires them to enter places where there are noxious gases. The invention consists principally in the manufacture of a substance which the Professor calls "Oxylithe." This chemical, which emits oxygen, has the general appearance of a stone, and resembles the well-known calcium carbide. By means of this discovery, in addition to a process of absorption of carbonic acid gas, M. Joubert claims to be able to produce a complete "breathing cycle," which sustains life without the aid of the atmosphere, and without any inconvenience to the subject of the experiment. The person whom Professor Joubert submitted to several tests had an apparatus fixed over his mouth and nose. He inhaled the artificial air by a tube connected to one end, and breathed out the vitiated air into a second tube connected with the other end of the apparatus. Mr. Joubert also conceived the idea of applying his invention to an explosion engine, and to substantiate his claim, he obtained a 1 1/4 H. P. petrol motor for the propulsion of motor cars, to demonstrate how it might be utilized for this purpose. The first experiment was perfectly successful, and the motor worked in a closed cycle without any assistance from the outside air, either as regards the supply of oxygen or the exhaust of the waste gases. Other larger engines were then experimented with, with the result that it was found that for a given power, the consumption of gas, petrol, or alcohol was reduced by 30 per cent, by means of the new process. The most important application of this invention will be in connection with submarine boats. It has hitherto been difficult to make use of any motive power in submarines, except that derived from electrical storage batteries.

Improvement Needed in the Alcohol Motor.

Despite the many attempts to popularize alcohol as a motive power, and the many strong points that have been recorded in its favor, little success has attended the movement. Every automobilist would welcome a fluid cheaper, safer, and as effective as petroleum. All these claims have been advanced for alcohol. What is needed is apparently a new form of motor—one somewhat more substantial than the gasoline engine and one having a considerably longer stroke, in order to utilize the greater expansive force of alcohol. A growing industry like automobilism should not be wholly dependent upon a few motive agents. A new and cheap fuel with all the qualities of petroleum would do much to increase the popularity of the automobile.

Brief Notes Concerning Patents.

Charles Eastwood, who died at Manayunk, Philadelphia, was the inventor of the stop motion on weaving looms, and was one of the first to introduce the power loom into the heavy woolen district of Yorkshire, England. He came to this country about twenty years ago and leaves a large family of children.

John L. Mason, the inventor of the Mason preserving jar, died on February 28 at his home, No. 577 Franklin Street, Brooklyn. The jar devised by him is used everywhere and has carried his name all over the world. He was born in Philadelphia and patented the jar when he was thirty years of age. It brought him a great deal of money.

A dispatch from Bucyrus, Ohio, says that the American Clay-Working Company of that place has given an order for machinery to manufacture an artificial fuel from clay which has undergone a chemical treatment. The invention was discovered by an old railroad engineer of Omaha, Neb., named Hofman. It is said that the heat given out by the fuel is greater than coal, and there is almost no ash remaining.

Celluloid for Phonograph Records.

When softened by the admixture of a solvent, celluloid expands considerably. Frank L. Capps of Newark, N. J., has availed himself of this property in making phonograph records. Within a cylinder matrix containing upon its inner face a cast in reverse of the original sound record, a celluloid cylinder is inserted. The two cylinders are then immersed in alcohol or the commercial "celluloid thinner," but preferably amyl acetate. Thus they are held for a short time until the surface of the celluloid has become softened. They are then removed from the bath and allowed to dry, care being taken that there is no slip between the two cylinders. When the celluloid cylinder is softened by the solvent, it expands and resumes its normal condition by the evaporation of the solvent alone; but the solvent can evaporate only from the interior surface of the celluloid cylinder and not from its outer surface, which is now tightly clamped against the surrounding matrix surface. Consequently the whole interior surface shrinks back from the center toward the matrix, drawing back and contracting the whole thickness of the cylinder wall. As each particle of the solvent from the outer surface of the celluloid cylinder and each particle throughout the mass of the same passes out, its place must be taken by an equivalent particle of celluloid. Hence the celluloid material is packed closely against the matrix surface, so that when the celluloid has resumed its normal condition the cylinder is of slightly larger diameter both externally and internally than originally. When the celluloid is thoroughly dried, it is separated from the matrix, and will be found to contain on its outer surface a faithful copy of the original sound record.

Electrical Process for Preserving Wood.

The Praktischer Maschinen-constructeur describes a method of preserving woods by electricity, which is applicable not only to railway ties, telegraph posts, and the like, but also to fine woods used in making furniture. The apparatus employed comprises essentially a wooden trough, on the bottom of which a lead plate is carried, connected with the positive pole of a source of electricity. The wood to be treated is placed upon this plate and covered with a second plate connected with the negative pole. The trough is filled with a solution of borax, resin, and sodium carbonate. Under the influence of the current the sap of the wood exudes and rises to the surface of the bath, its place being taken by the preserving solution. After five or eight hours of this treatment, the wood is removed and dried, either in the open air or in a drying oven. The current used has a tension of 110 volts. The consumption of energy is about 1 kilowatt hour per cubic meter of wood. For wood freshly cut and very moist, the current expenditure is still less. The temperature of the leaching bath varies from 40 to 45 deg. C.

A Chicago inventor has applied the Wheatstone bridge to the very novel purpose of detecting the presence of metals in the earth. The terminals of the bridge are inserted in the earth at a definite distance apart, and the reading of the resistance boxes taken, thereby showing the resistance included in the space between the two terminals. If ores or minerals be present, then the resistance of the earth at the particular point where the measurement is taken will be less than if no ore or mineral were present, by reason of the well-known fact that a current will seek the path of least resistance. The inventor therefore claims that by comparing the measurements taken in different places of the same region, the location as well as the presence of the ore can be detected. When the location is once determined, the depth below the surface is to be ascertained by varying the distance between the terminals and comparing the corresponding readings of the rheostat.



"BATACLAN" CLEARING A 6-FOOT 7-INCH HURDLE.



"BATACLAN" CLEARING A DINNER TABLE.

O. H. Hampton, of Fountain City, Ind., has made some interesting experiments in photographing by means of acetylene light. Negatives were made fully equal in intensity to those which were taken in broad daylight. Mr. Hampton has invented a special machine, whereby photographs can be taken by means of acetylene light. Photographers who find it difficult to employ electric light will probably soon have recourse to acetylene.

The British government has removed the library in connection with the Patent Office to more commodious premises in Chancery Lane, London. The new building is 139 feet in length, by 59 feet in width, and about 74 feet high. The floor of the library, which contains over 120,000 bound volumes, is devoted to English patent specifications, indexes, etc., scientific text-books, and the current as well as the unbound numbers of English and foreign periodicals. On the lower gallery can be consulted the foreign patent specifications, as far as they are in the library, and the bound volumes of periodicals and magazines. The top gallery is reserved for books that are rarely required.