

## AN ALUMINUM ALLOY.

It has been generally supposed that aluminum and antimony had but little affinity for one another, but Mr. D. A. Roche, the latest experimenter on the subject, has found a method by which they can be united with good results. The process is to fuse the two metals directly in a Perrot furnace at a low temperature. When the alloy contains less than 5 per cent. of antimony, it is hard and possesses a greater tenacity and elasticity than pure aluminum, although it is still perfectly malleable. In color it is a little less white than aluminum, but it is more silvery and of greater brilliancy. Upon an increase of the percentage of antimony the alloy becomes harder, but it also becomes more brittle, and the crystallisation which distinguishes aluminum disappears: when there is 90 per cent. of antimony, groups of separate crystals may be seen. As this percentage is increased the melting point becomes higher. The aluminum-antimony alloys are said to combine with other metals, forming more complex combinations, among which may be mentioned those with nickel and with Tungsten, so remarkable for their hardness and elasticity.

## MACHINERY CASE.

In 1888, W. H. Shaver, of Hamilton, purchased from H. W. Petrie, of Toronto, an engine and boiler, on the understanding that it was to be paid for in lumber and other wooden-ware, Shaver in the meantime giving lien notes by which the property was to be considered Petrie's until settlement was made. Later on \$1,056 worth of lumber was delivered and \$100 in cash paid over. In 1889 Shaver assigned, and his wife, Mary, purchased the property, selling the engine and boiler, in 1892, to John J. Scott, barrister, of Hamilton, who bought without notice of Mr. Petrie's claim. In March, 1893, the defendant's agent seized the machine, as it had not been fully paid for. Scott brought an action for damages and to have Petrie restrained from dealing with the engine, and Petrie in his defence claimed \$500 for the detention of his engine and boiler. At the trial judgment was given for the plaintiff, but the Divisional Court reversed this. Now Mr. Petrie has brought the case before the Court of Appeal.

PLASTER of Paris figures may be made to look like alabaster by dipping them in a strong solution of alum water.

ELECTRICITY, when unretarded by atmospheric influences, travels at the rate of 288,000 miles a second. Along a wire it is, of course, vastly slower, and a perceptible period of time is occupied by the electric current in sending telegrams over long distances.

A NEW arrangement of the telephone has recently been devised for the use of divers. In place of one of the glasses in the helmet a sheet of copper is used, and to this a telephone is fixed, so that when at the bottom of the sea, the diver has only to turn his head slightly in order to receive instructions from above, or report what he sees below.

AN English engineer has devised the ingenious method of producing metallic hollowware articles by the electro-deposition of metals or metallic alloys upon suitable cores or matrices. The core may be made of wax, metal or alloy, or of India rubber, which may be inflated for the purpose of receiving the coating and deflated for removal. While electro-deposition is taking place the core is revolved in the bath in opposite directions, alternately, and is shifted endwise, the object being to produce a coating having a smooth surface. The anodes (of the metal to be deposited) are divided from the cathodes (the core) by porous earthenware partitions, through which the liquid is circulated by means of a pump.

AN English inventor has devised a belt which can be built of small pieces of leather and has great tensile strength, combined with elasticity. By the method of construction the belt can be taken up and shortened in case of its becoming too slack. In making the belt, the inventor employs a ribbon composed of strips of thin steel joined together at their ends by rivets or other suitable means. On the inner or pulley side of the ribbon pieces of leather or other material are fastened by means of rivets. Each link is curved in the direction of its length, which allows it more easily to pass around the pulleys, and insures the necessary elasticity when the links are straightened out. With large belts the necessary strength is obtained by employing more than one link placed one over the other or side by side.

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