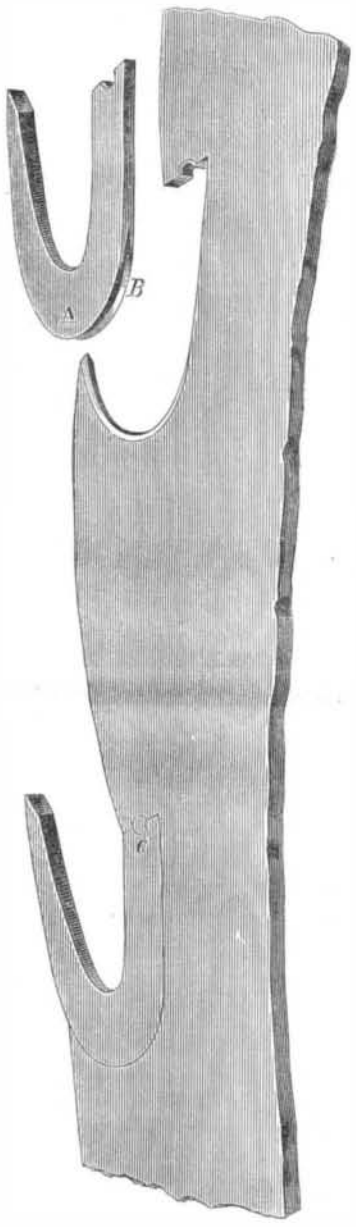
EMERSON'S SAW TOOTH.

This engraving represents a plan for securing false teeth in circular saws—called false teeth in distinction to those worked solid on the saw, in the usual manner. It is not claimed that the idea of so fastening teeth in saws is novel, but that the plan itself is a valuable improvement.

It will be seen, on examining the engraving, that the tooth, A, is curved in form, and that it is grooved on the back, as at B. In this shape it is fitted to its seat in the saw, which is adapted to receive it, as will be perceived on inspection. When once placed it is fastened by a rivet, C, one half of which is in the tooth, and the other half in the saw, where it is firmly held. It is claimed that this method of construction prevents the teeth from ever becoming



loose, for the reason that the action of them on the wood being sawed tends to bind them firmly in place, and that the greater the resistance the stiffer they become. The beveled edge of the seat on the saw prevents the tooth from slipping sidewise, as may be seen.

It is also claimed that the teeth are easier to fit in place than by some other methods, and do not injure the saw itself by buckling or expanding it, as is done when the teeth are driven in forcibly. The concave side of the teeth are made thicker than the opposite, or convex side, forming, as the inventor says, a dust chamber, so that no saw dust is allowed to pass the tooth and clog or pack against the timber and heat the saw when in use, but is all carried through the timber and discharged below.

The inventor claims for his improvement the following advantages:—The teeth are forged from the best cast steel, and, therefore, are better material than the saw plates; they can be removed and new ones inserted very readily; they increase the size of the saw; they require no setting, and run with less power than common teeth, and can be more easily kept in order; the liability of breaking and springing or straining the saw by gumming is avoided, as these teeth are not so treated; only one half the number of teeth are required, and these cut smoother and are not so liable to heat when in use as the ordinary one.

Parties can be furnished with these teeth by Emerson & Silver, of Trenton, N. J., where they can be seen in use. Descriptive circulars will be sent to any address.

The patent for this invention was obtained through the Scientific American Patent Agency, on September 12, 1865, by J. E. Emerson; for further information address as above.

RAISING OF A WRECK.

We published last week a description of the steamer *Saxon* and her submarine apparatus. Since that was written, the steamer has had an opportunity to try her powers practically, in saving a wreck, and with the most brilliant success. We are informed by Mr. Macdonough, the President of the Company, that the *Saxon* sailed from this port in the afternoon of Tuesday, the 14th inst., for the great harvest ground of wrecks, Key West, Fla.; and the next day, Wednesday, while on her way down the coast, she discovered the rail of a vessel just above the surface of the water. Proceeding to the wreck, Capt. Holbrook perceived that it was a schooner, capsized and nearly sunk. As the weather was threatening he made fast to the wreck and towed her into the Lewes, inside the Delaware breakwater, where he could conduct the operation of raising her in still water.

Two of the india-rubber bags were lashed together and passed under the keel near the bow, and two others near the stern; these bags being connected by hose with the reservoir of compressed air on the steamer. When all was ready the stop cocks were opened, allowing the compressed air to flow into, and inflate the bags. In five minutes the schooner's deck was above the surface, and she was on an even keel. She proved to be the schooner *Damon*, of Waldoboro, Me., loaded with live oak plank, an A2 vessel of 200 tuns burden. She was taken to Philadelphia, and drawn up on the ways; on examination, her hull proved to be very little injured.

By the old process of raising wrecks, two canal boats would have been placed, one on each side of the schooner; they would have been sunk to the water's edge, and lashed together by chains passing under the schooner's keel; and then the water would have been pumped out of them—a process occupying three or four days. The salvage from the *Damon* will probably pay the expenses of the *Saxon* for two months or more.

IMPROVED CURRENT WATER WHEEL.

Le Pays, of Paris, says that crowds of Parisians are gazing with curiosity upon a strange-looking craft that is anchored in the Seine; and our cotemporary devotes four columns to a description of the novelty. It is an apparatus for utilizing the power of the current for driving machinery. A vessel is anchored in the stream, and a long, endless chain, passing over a drum, carries a series of floats, which pass down stream submerged, and return above water. The floats are made about 16 feet long and 2 feet wide, and they are attached to the chain at intervals of about 6 feet. The writer estimates that with 70 of these floats and a current of 2 miles per hour, 10 or 12 horse-power may be obtained. The plan was conceived in 1821 by M. Roman, a mechanic of Beaucaire; he has recently obtained patents for it, and a wealthy company has been organized to carry it into practical use.

Magnesium.

M. Bultinck, of Ostend, proposes the substitution of magneseum for zinc in voltaic circles.

Take a piece of copper and a piece of zinc wire of the same size, fix them in a cork at a little distance from each other, attach fine copper wire to the upper end of each piece of metal, and connect the little battery with a delicate galvanometer. Float the cork containing the metal wires in a glass of distilled water, and the needle of the galvanometer will be deflected thirty degrees, finally resting at a deviation of ten degrees in five minutes. Substitute wires of silver and magnesium of precisely the same size for those of copper and zinc, and connect them with the galvanometer as before. The needle is now deflected ninety degrees, and rests at twenty-eight degrees. These comparative experiments show a difference of nearly sixty degrees in favor of magnesium and silver over zinc and copper.

M. Bultinck made a chain similar to Pulvermacher's, of twenty elements of magnesium and silver wire, and this, plunged in pure water only, gave chemical, physical, and physiological effects equal to those made of zinc and copper, excited by salt or acidulated water.—*British Journal of Photography.*

REYNOLDS'S BAG HOLDER.

Not to "know beans when the bag was open," used to be a term of reproach applied to youths with thick skulls and somnolent propensities. In some cases this was unjust, for, of old, bags were not held open, and it would take a good prophet to tell what was in them without previous knowledge.

The bag holders in use at the present time have

proved very handy, and that here shown seems to be a capital one. It consists of a single wire, A, bent so as to form a spring, and provided at the ends with metallic arms, B, which distend the bag, as shown; indeed, the artist has left us but little to do by way of description, so clearly are all parts, and the uses of them, shown.

This holder is to be suspended from any convenient point, and is quickly taken out and put in another bag. It is only necessary to grasp the two wires with the hand, when the arms are drawn together, and the bag is released.

A patent was issued through the Scientific American Patent Agency, on Nov. 28, 1865, to E. Reynolds, of Corunna, Mich.; address him at that place for further information.

GLUE IMPERVIOUS TO WATER.—If a coating of glue or size be brushed over with a decoction of 1 part of powdered nutgalls in 12 of water, reduced to 8 parts, and strained, it becomes hard and solid. It makes a good coat for ceilings to whitewash on, and for lining walls for paper hangings.