

CURIOSITIES IN SCIENCE AND INVENTION.

PEDALING ON WATER.

Every once in a while an inventor comes forth with some new contrivance for traveling over water, which though of no practical utility is interesting because of its novelty or oddity. Pictured herewith is a

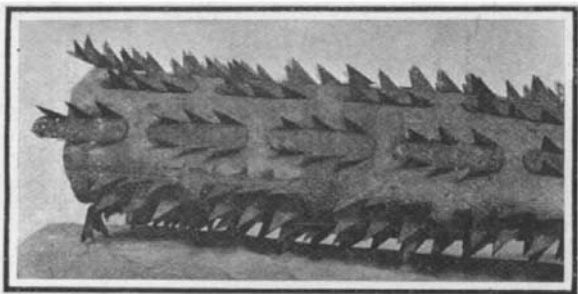


A CURIOUS SAIL AND PEDAL PROPELLED CRAFT.

very queer craft comprised of three floats which support a bicycle frame. The navigator sits on the bicycle seat, operating the pedals in the usual way, and the latter are geared to a screw propeller, which drives the craft forward. The front float serves as a rudder. As progress is rather slow, a small sail is provided, which is attached to the forward float of the craft.

THE ICE DRAG OF THE WELLMAN EXPEDITION.

One of the curious contrivances gotten up for the Wellman airship expedition to the North Pole was a drag that would retard backward drift when the airship was encountering head winds too strong to permit of anchoring. It consisted of a long leather tube,

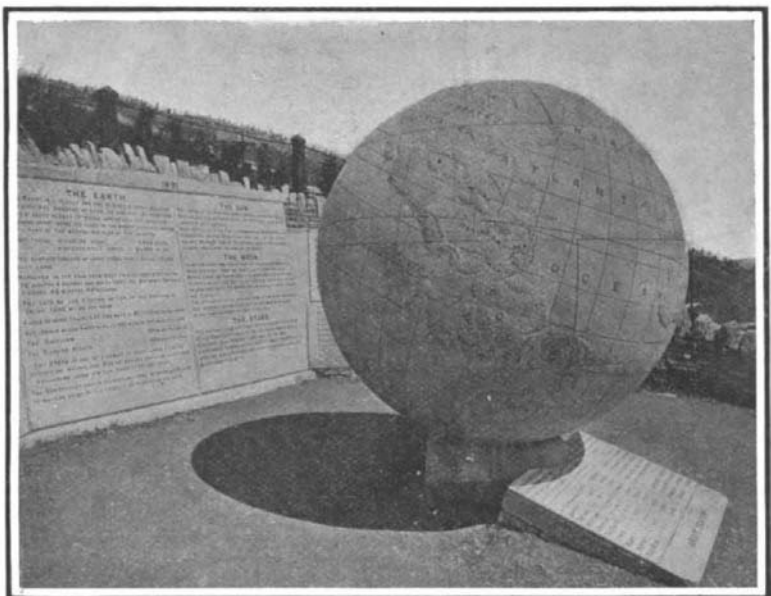


AN ICE DRAG FOR AIRSHIPS.

armed with steel spurs adapted to dig into the ice, as it trailed over the surface. The tube also served as a reservoir for food. It was ingeniously figured out that as the balloon gradually lost its lifting power because of the leakage of gas, the drag would also become lighter because of the consumption of food, and thus its dragging effect would always be proportional to the weight of the airship.

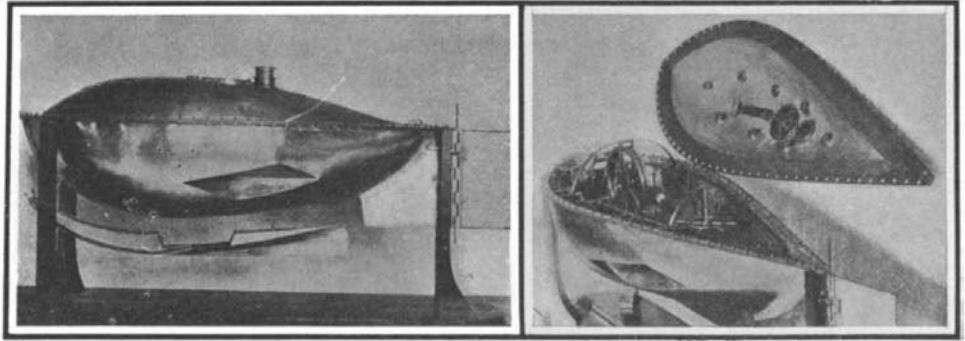
AN EARLY TYPE OF SUBMARINE BOAT.

Whenever a prominent invention is reduced to practice, the inventor finds his claim to originality called in question by the work of some obscure inventor living generations before. It does really seem as if there were nothing new under the sun. In the early part of



THE GREAT STONE GLOBE AT SWANAGE.

the last century a friend of Herr Leeghwater, the celebrated Dutch engineer, spent all his fortune and ran deeply into debt by constructing a model of a submarine boat. Illustrations of this remarkable submarine are shown herewith. The boat was of porpoise shape, and was designed to be driven by four men turning a fly-wheel. The latter operated fan-like valves working in the orifices under each bow, thereby drawing in water, which afterward was forced out in jets by means of pistons also operated by the fly-wheels. The boat was trimmed by means of weights moved along the tramway shown at each side. The conning tower was telescopic, so that when diving far below the surface, where the pressure of the water would be too heavy on the glass windows, the tower could be collapsed. Unfortunately, the name of this early inventor has been lost.



Model built early in the last century.

Cover of the model removed to show the mechanism within.

AN EARLY TYPE OF SUBMARINE BOAT.

COIN-OPERATED DEVICE FOR REGISTERING LETTERS.

In one of the city post offices in Paris there is an apparatus which automatically registers letters, and issues a receipt for the sender of the letter. The apparatus is arranged to receive the French nickel or 25-centime piece. Advantage is taken of the fact that it is slightly magnetic, for in passing down the coin chute it is obliged to leap a gap and is prevented from dropping through by means of a magnet. A counterfeit of iron cannot pass the gap because it would be lifted up by the magnet, while non-magnetic coins would fall



The apparatus used in a Paris post office.



Facsimile of receipt issued by the machine.

COIN-CONTROLLED APPARATUS FOR REGISTERING LETTERS.

through. The letter slot does not open until after the coin is placed in the machine, and the receipt is not issued until after the letter is placed in the machine. The receipt, in the form of a ticket, is dated and stamped by turning the crank at the side of the apparatus. The whole operation is performed in less than five seconds, and is calculated to do away with the long line of waiting applicants at the usual registering windows. The apparatus can also be placed in banks or stores, where there is no danger of its being stolen, thus relieving the pressure at the regular post office.

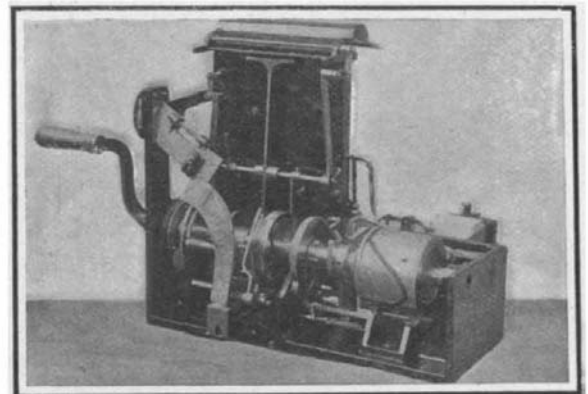
THE GREAT STONE GLOBE AT SWANAGE.

A peculiar monument is set up at Swanage, Dorset County, England. It consists of a globe 10 feet in diameter and weighing 40 tons. On it the continents and oceans are shown, the former in slight relief. Carved in the globe are the meridians, parallels of latitude, ecliptic, and tropics. The axis of the globe is inclined to correspond with the inclination of the earth's axis with respect to the ecliptic, but unfortunately the inclination is not in the right direction. Were the axis of the globe parallel with the axis of the earth, observers would be able to get a correct

idea of day and night in different parts of the earth when the sun is shining on the stone globe. The monument is intended as a lesson in astronomy. Engraved on tablets of stone about the globe are data concerning dimensions of the earth, etc.

We have not heard the last of the "Mauretania's"

great steaming powers and performances. Toward the end of the year, when the passenger season slackens down, the "Mauretania" will go into dry dock and be fitted with new propellers designed at Wallsend and specially intended to utilize the vessel's reserve of engine power which has not yet been called into full play. The propellers are similar to those which have recently been fitted to the "Lusitania," and with such good results that the vessel immediately broke the record. The "Mauretania," however, soon responded, and went one better, even with her old propellers. With the new ones, when fitted, it is naturally expected that she will do still better. Indeed, the builders and engineers of the "Mauretania" anticipate making her a 26-knot ship at the least, for her special advantages in design and engine power will be brought out to their full capacity.—The Mariner.



Interior mechanism of the letter-registering apparatus.

SPRAY HELMET FOR FIREMEN.

Firemen frequently find it necessary to play the hose on their fellow firemen to protect them from the intense heat of the conflagration which they are fighting. Borrowing from this idea, an inventor has devised a helmet formed with a spray nozzle, which is connected to a small hose line. The water spouts out from the nozzle in all directions, causing a miniature cascade around the body of the fireman, enabling him to attack at close quarters fires that would be unendurable under ordinary conditions.



FIREMAN PROTECTED BY A SPRAY HELMET.