The Science of Teaching and the Teaching of Science.

The annual general meeting of the Teachers' Training and Registration Society and of the Bishopsgate Training College was lately held in the theater of the Society of Arts, Lord Aberdare presiding.

Professor Goldwin Smith, in moving the election of the council, said that the void in their system was in secondary education, and to that point the efforts of the friends of education should be specially directed. In America at the present time they were afraid that superficial education made some persons restless, and induced them to leave the small towns and flock into the cities. That objection, however, applied to the lower strata of society rather than to that with which the association dealt. What was, however, to be guarded against was the mere show of education—the attempt to teach what teachers did not know. After all, it was not in the culture but in the character of the individual that the usefulness of their lives appeared.

Professor Huxley, who seconded the resolution, said that more than twenty years ago he was appointed one of the examiners in the Science and Art Department, as now, and one of the first things his colleagues and himself discovered was that their great difficulty was with the teachers. In respect of the teaching of science, he had constantly brought before him the wide gulf fixed between the two different kinds of what persons called knowledge. The one was a mere learning to repeat a verbal proposition, and the other was knowing the subject at first hand—a knowledge based upon a knowledge of the facts. That which they had constantly to contend against in the teaching of science in this country was that teachers had no conception of that distinction; for they thought it quite sufficient to be able to repeat a number of scientific propositions and to get their pupils to repeat them as accurately as they themselves did. If he might offer one suggestion to the governing body of the college it was that so far as they taught science at all they should aim at giving real and practical scientific instruction; that it should be confined to those things about which there was no dispute; and that the teacher should be instructed that his business in teaching was to convey clear and vivid impressions of the body of facts upon which the conclusions drawn from those facts were based. The resolution was adopted unanimously, as were two others.

Another Ballooning Failure.

An attempt was made March 4, by Colonel Brine, of the British Royal Engineers, and an aeronaut by the name of Simmons, to cross the English Channel in a balloon.

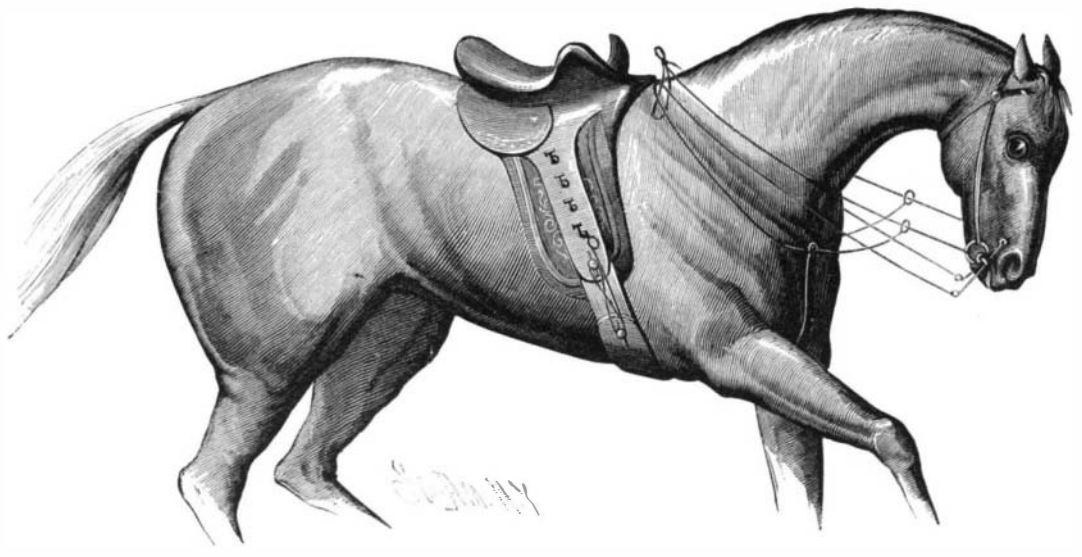
Before they were halfway over the wind shifted and was driving them toward the North Sea, when they dropped into the sea and were picked up. They say that their descent was intentional.

NEW SIDE-SADDLE GIRTH.

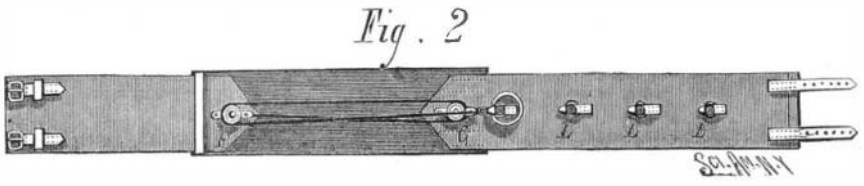
The engraving shows an improved side-saddle girth which can be tightened by the rider without leaving the saddle. The girth is composed of two sections, united at two adjoining ends by straps and buckles, the other ends overlapping each other, one end sliding upon the other, both being provided with pulleys over which a rope or strap passes which is fastened to the end of the sliding band and terminates in a ring which is hooked on one of a series of hooks on the fixed band above the upper pulley.

When the girth is in use the ring at the end of the rope is hooked on the lowest hook and the girth is passed around the horse, and is fastened by means of the straps and buckles in the usual way. If the girth becomes loosened—as it generally does a short time after it has been fastened— the rider seizes the ring with the right hand, unhooks it, and by pulling on it brings the two pulleys, F and G, together (Fig. 2); by this means the girth is shortened and consequently tightened. The ring is then hooked on one of the hooks, L, and should the girth again become loosened it may be tightened in the same way.

This invention was recently patented by Mr. William McNaught, of Cartersville, Ga.



McNAUGHT'S SIDE-SADDLE GIRTH.



McNAUGHT'S SIDE-SADDLE GIRTH.

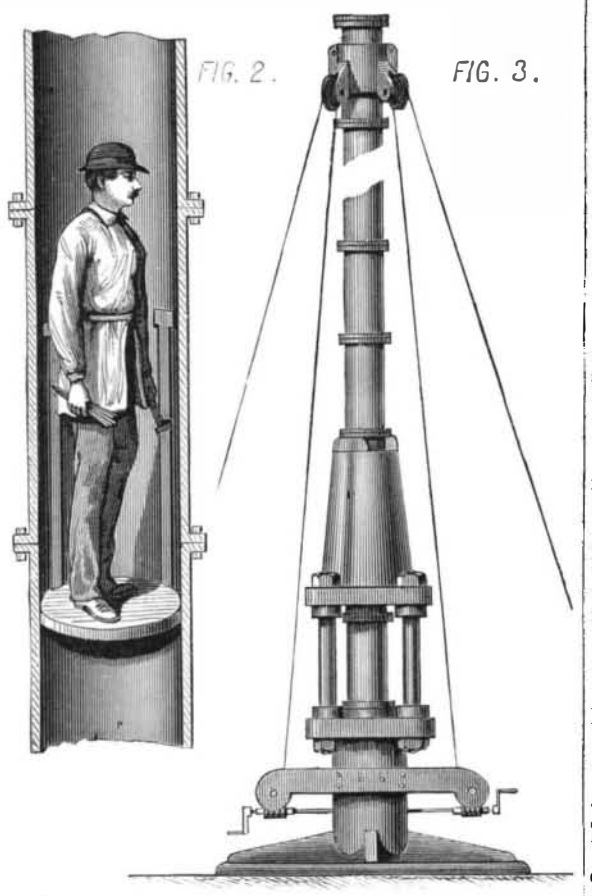
Some Representative Americans.

The theory that the human race will not be able to maintain a high order of physical development on this continent did not receive much encouragement at a recent social gathering in this city. The Titans, a society to which only gentlemen of position and of a stature not below six feet two inches are eligible, now numbers about a hundred members, largely representative of our oldest and best known American families. Seventy-three Titans sat down together at the recent annual dinner of the society. The tallest measured six feet six inches. There were a dozen generals and colonels among them, as many prominent physicians, and a long list of distinguished lawyers and business men.

PROPOSED ELECTRIC LIGHT TOWER AT NEW ORLEANS.

[*Continued from first page.*]

build his home at the top. With the boldness of the genuine inventor, Mr. Wm. Golding, M.E., not only essays to accomplish this proverbially impossible task, but actually shows how it may be done in a way that certainly presents no obvious features of impracticability.



VERTICAL PLAN OF GOLDING'S ELECTRIC LIGHT TOWER.—SECTION SHOWING LIFT FOR LIGHT TRIMMER.

Mr. Golding dispenses with stagings and the usual machinery of tower building, and raises his tower into the air by additions made at the bottom. The tower is a cast iron cylinder built up of short sections, five hundred feet high, if need be, and kept vertical while in process of erection and afterward by means of guys. The top sections, to which the lamps are to be permanently attached, are put together first, and, by means of an ordinary derrick, are set vertically over a hydraulic press placed upon the intended foundation of the tower. The hydraulic lift raises the top sections until a new section, say five feet long, can be set underneath. While the lift is returning to admit a new section the raised tower is held in position by a clamp and kept vertical by means of the guys which are simultaneously fed off by a wormwheel gear as the tower is pushed up. When the new section has been securely bolted on, the whole is lifted another length; and thus by successive lifts and additions at the bottom the tower is raised until the required altitude is attained. The method of lengthening the guys is simple and practically automatic, and no trouble is anticipated in keeping the rising tower steady and exactly vertical.

Each section of the tower will be bored out before it is put in place, and have a diameter sufficient to allow the easy passage of a circular platform carrying the lamp trimmer, who will be lifted to the top of the tower by means of a piston operated by compressed air supplied by pumps or a rotary blower. The inventor thinks that the pressure need never exceed half a pound to the square inch. The cost of a five hundred foot tower complete (without the lamps) raised in the way described is estimated at about $30,000.

Mr. Golding proposes for the levee at New Orleans a five hundred foot tower, to carry an electric light of 40,000 candle power. He would have it placed at the intersection of Canal street, as shown in our large engraving. Such a light so placed, it is evident, would abundantly illuminate the levee, the harbor, and the opposite shore.

The smaller engraving shows the method and machinery requisite for raising the tower and for lifting the lamp trimmer to the top.

Mr. Golding suggests that the tower might be used as a look-out station for the fire department, and be further used as a telegraphic center, wires being run from the tower to the different offices about the city and across the river to Algiers without other support, the over-river wire being high enough above the water to be entirely clear of ships' masts.

The erection of lofty light towers such as Mr. Golding proposes would not only be clearly advantageous to the commerce of New Orleans, but would make that port conspicuous for its convenience to shipping as well as for its nocturnal splendor.

MISCELLANEOUS INVENTIONS.

Messrs. Thomas Neely and Alfred Marland, of Pittsburg, Pa., have patented a simple and effective guard for fence wires so constructed as to prevent the skin and flesh of cattle from being torn as they are liable to be when barbed guards are used. The invention consists in combining with one or more wires metal disks having smooth, sharp edges, by which a clean cut is made in the skin of cattle coming in contact therewith.

Mr. Richard Mills, of Buffalo, Ill., has patented an improvement in gang plows, in which the plows are constructed with forwardly-projecting prongs upon their shears and guards upon their mould boards, by which the furrow slices will be raised and kept upon the mould boards till they reach the proper point to be turned.

Explosion of a Locomotive.

A singular explosion was that of locomotive No. 419, used on the Peoria branch of the Wabash, St. Louis and Pacific Railway, which exploded in the round-house at Lafayette, Ind., at 7 A.M. of the morning of February 20. Neither the engineer nor fireman had arrived, and as one of the men in charge of the building was in the act of turning the table in front of the engine, without any kind of warning the boiler burst, carrying destruction and injury in every direction, but happily without loss of life. The roof of the building, which was 154 feet in diameter and of sixteen stalls, was cone shaped, supported by brick walls and covered with tin. The explosion forced the walls outward, and the roof fell down, a complete wreck. Only fragments of the walls are standing. A correspondent of the Chicago *Tribune* says: One singular feature about the explosion is the fact that it made comparatively small noise, the concussion being more in the nature of a heavy thud, causing the earth to jar for a moment. The pieces of the wreck were not blown over all creation, as is usually the case, but the force of the explosion seemed to have spent itself in the demolition of the wall. There were a number of narrow escapes, but outside of the men who were in the building no serious accident occurred. One of the locomotives was about half way out from beneath the arch when the explosion occurred. The fireman was thrown from the cabin to the tank, but aside from an injury to the hand like that produced by a falling brick, he was not hurt, though stunned. The engine was considerably damaged, the smokestack knocked off, rods bent, and other like injuries. There were thirteen locomotives in the building at the time of the explosion. All of them are damaged, but probably not to any great extent. Headlights are broken, smokestacks demolished, and rods and bars bent and broken, but as soon as they are gotten out they can be very speedily repaired. The men in charge are unable to account for the accident, save from some defect in the boiler. There is said to have been an abundance of water therein. Five men were injured—one only seriously.