

ON THE DESIGNING OF ICE BOATS,

On the subject of design there will always be a difference of opinion until a man like Hiram Relyea, who designed the *Robt. Scott* in 1879, causes a revolution in building of ice yachts' hulls.

The consideration nowadays is in placing the center of balance of sails to agree with the perfect working of the hull, and the nearer this balance is obtained the easier your boat will handle.

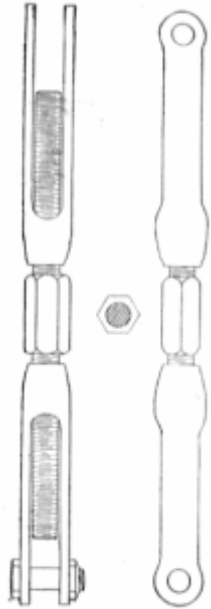
The question of rigging is of next importance. It has been fully tested that all wire rigging must end up in a loop, whether over a spar, backbone, or over a turn-buckle, to stand the sudden wrench or the constant vibration necessitated in the yacht's motion over the ice. This applies to hull as well as aloft. Take, for instance, the backbone, which we will consider one single stick worked out to the proper grade and upper reflux curve fore and aft, and finished on each end for a loop width saddle and iron. The bowsprit shroud and after-runner guy are in one piece, with a grip at runner plank, just under your shroud-fork iron, and leading aft, where a turn-buckle is rove in and a loop passed over the extreme after-point of backbone. This rig enables you to tune up your runner plank to the perfect right angle with the backbone, or to shift the runner plank by loosening and shifting up the backbone strap to a small part of an inch forward or aft.

The question of backbone in one piece of

timber with the heart on top, capped with some fancy wood, has been demonstrated beyond a doubt. The runner plank, also, with the same cut from the log, is correct, but as a question of wood it lies between basswood and butternut. Each has its followers. For rough and practical work, outside of lake racing, the tendency is for butternut, although, for a boat of 400 or 450 square feet of canvas, the board should not be less than $5\frac{3}{4}$ inches thick at center and 14 inches broad, tapering to $2\frac{7}{8}$ inches at extreme ends.

The spread of the cutting surface of the fore-runners is on the increase, and over-canvasing is being entirely discarded for the simple reason that a yacht that is given to skyward flights of its windward runner is sure to be a time loser.

H. PERCY ASHLEY.



THE NEW TURN-BUCKLE DESIGNED FOR THE AUTHOR BY T. C. FERRIS, N. A.

CYCLE ICE YACHTING.

THE innumerable large and small bays, inlets and rivers tributary to the Great Lakes, now covered with immense expanses of glary ice, were put to a new and novel use last winter. In seasons gone the glassy surface of the congealed lake was a most wholly devoted to the use of the ice yachtsman, the skater, the fisherman and the ice harvester. Now these four diversified interests are no longer the only ones which lay claim to the right to use the ice for purposes of pleasure and profit.



As in other instances, too numerous to mention, the wheelman, with his steed of steel, has pushed into this heretofore limited field, and he now enjoys spinning over the surface of the frozen lake, bay or river as much as does his brother on skates or on a speedy ice-boat, and he does not forsake his favorite mount to do it.

It was at historic Put-in-Bay Island, near the south shore of Lake Erie, that cycle ice yachting was first brought to the attention of cyclists a year ago, and now there is hardly a lake port on the entire chain of inland, seas that does not boast of cycle ice-yacht enthusiasts.

It is indeed an odd spectacle to witness races between half a dozen riders—contests which are not won because of a fortunate possession of brawn and muscle, with a knowledge of cycling manœuvres, but which are won by reason of the rider's expert wheelmanship, together with much-needed experience in the handling of an ice yacht or full-rigged catboat. Besides being exhilarating the sport is attendant with its share of excitement and danger, especially more of the latter than is consistent with solid comfort for with air-holes, snow banks, and the slides and slips incident to glary ice, the "navigator" has his hands, as well as his mind, wholly occupied, and even at that the chances are ten to one that he does not see a small ice hummock directly in front of him—then there is a crash, a sprawling battered and bruised cyclist, a badly damaged

wheel, and lastly, a weary, foot-sore, cold and expostulating wheelman leading a no-more fractious cycle homeward over the ice.

For the purpose of yachting the bicycles are fitted up with sails and masts, and a common manner of rigging them is shown in our illustration. The wheels of the machine are left the same as for land use, except that the front wheel is oftentimes made stationary and a skate is attached, which greatly facilitates the steering, and also adds to the craft's efficient in working to windward or against the wind. A small spar, three to five feet long, is fastened to the head of the bicycle, and at right angles to this, across the top, is a light stick (the upper boom)



reaching out either way, sometimes as much as four feet. The sail is made fast, or, to be more nautical, bent, to the upper boom, or light cross stick above mentioned, and to the lower part of the sail is bent another boom similar to the one to which the upper part of the sail is made fast.

The sail is made of light muslin, and is from three to five feet high and from four to eight feet wide, and in it are cut one or two holes, according to the size of the "canvas," to enable the navigator to keep a sharp lookout ahead.

When the sail is bent to the booms, and the center of the upper boom is made fast to the top of the spar, pieces of small rope, or "sheet lines," are attached to each end of the lower boom, so that the sail can be trimmed to suit the "course" of the "yacht" and the direction of the winds.

The pedals of the wheel are seldom used for propulsion purposes, but come in handy to assist in steering and to be used as a brake by back-pedaling. Wheelmen who do considerable sailing, with a slight previous knowledge of the art of managing a yacht, become such adepts in handling their rubber-shod steel craft that excellent, headway can be made "tacking" or "beating" to windward; but it is in running wit the wind "aft," or over the "quarter," that the most pleasure is obtained out of the novel sport, for it is on this course that phenomenal speed is attained—even equaling that made by ice boats, when conditions are favorable.

O. K. SCHIMANSKY.

CYCLING.

THIRTY-INCH WHEELS.

BICYCLES equipped with thirty-inch wheels will be offered by several American manufacturers for 1899, in some instances at the regular list price of twenty-eight-inch wheels in others at a slight advance. The advantages broadly claimed for this type are increased ease of passing over rough road surface, lessened vibration and greater suitability for tall riders. A few years ago bicycles fitted with twenty-eight-inch wheels in front and thirty-inch rear were favored in England, but later abandoned for the uniform twenty-eight-inch wheels used in this country from the beginning of safety construction. In general appearance, these larger models are not improved over standard designs, shorter steering-heads and shorter frames being necessary in case the heights of the completed machines are not to be increased. A trifle additional weight must be allowed to equal the strength of the same models in twenty-eight-inch wheels. Higher gears and longer cranks are usually fitted to thirty-inch machines.

DIVISION ELECTIONS L. A. W.

Late in November elections for general State Division officers of the L. A. W. were held in New York and Massachusetts; The result in New York was the election of Mr. M. M. Belding, Jr., of the Borough of Manhattan, as chief consul and Mr. H. B. Fullerton, of the

Borough of Brooklyn, as vice-consul. For representative of the First District, Dr. L. C. Le Roy polled the heaviest vote, with ex-Chief Consul Isaac B. Potter only one vote behind him. In Massachusetts, Sterling Elliott received 3,222 votes out of 3,956. Dr. A. A. Bryson, of Fall River, was elected vice-consul and Aaron Wolfson, of Dorchester, secretary-treasurer. The latter had but eight majority, however, over Arthur K. Peck, who ran on an independent nomination. The total vote for secretary-treasurer standing: Wolfson, 1,724; Peck, 1,716.

IMPORTANT LEGAL DECISION.

Judge Braulein, of Buffalo, N. Y., has rendered a decision to the effect that the purchaser of a bicycle on the installment plan must carry out the terms of the contract without regard to whether a reduction in the price of the machine is subsequently made or not. On April 12, 1897, Mrs. Daniel Peckham, of Buffalo, bought a bicycle, the purchase price of which was \$100, and so stated in the contract. She paid \$77.50 down and agreed to pay the balance within a reasonable time. Less than three months afterward the makers of the wheel purchased by her reduced the price of their machines to \$75. Mrs. Peckham then declined to pay the balance of the \$100, claiming that she had read paid more than the price of the machine at the time it was delivered to her. The retailer instituted suit to recover the balance due