Scientific American

THE CHALLENGING YACHT "INGOMAR."

Although there is to be no race for the America cup this year, there will be a certain amount of international flavor imparted to the season's yachting by the fact that the crack American schooner yacht, "Ingomar," of which we show an excellent illustration, is now on her way to European waters, to sail in as many

contests as she may find it practicable to enter. The special object of her trip, however, is to win, if possible, the celebrated New York Yacht Club's Cape May challenge cup, which has been held in England for nearly twenty years, having been won by Sir Richard Sutton's cutter "Genesta" in 1885. The "Genesta," it will be remembered, was the challenger in that year for the America cup, for which she made a brilliant struggle, being defeated by the centerboard sloop "Puritan." It was at the close of these races that the owner of the "Genesta" challenged for the Cape May cup. The defense of the cup was undertaken by the late Caldwell H. Colt's big schooner yacht "Dauntless," and the race took place outside Long Island, where it was sailed in a strong gale and a very heavy sea, in which the cutter completely outsailed the schooner. Only one attempt has been made since the cup went to England to recover

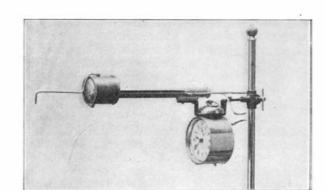
it, and this was by the centerboard sloop "Navaho," which was built by Herreshoff for the express purpose. The Prince of Wales' cutter "Britannia" was selected for the defense, and she had no difficulty in defeating the centerboard yacht. The "Navaho," however, was one of the least successful of Herreshoff's boats. She represented his first attempt to build a large racing craft, and compared with his latest successes, she must be regarded as something of a failure.

The beautiful craft which is now on her way to Southampton, however, represents the latest effort of the Bristol designer, and in her few races last season on the Sound, she proved to be a very able craft, easily

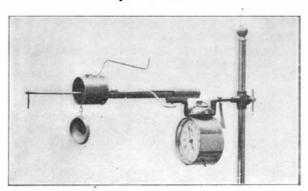
defeating the competing yachts in light to moderate breezes, but being beaten by the Fife cutter "Isolde" in a heavy breeze. She is not such an out-and-out racing craft as the "Reliance" or "Columbia," although her construction is probably fully as light as that of such boats as the "Vigilant" and "Colonia." Her dimensions are: Length on the waterline, 87 feet; length on deck, 127 feet; beam, 24 feet; and draft, about 161/2 feet. The boat was designed for racing in American waters, and originally carried a centerboard and a very large sailspread. For her career in European waters she was altered by the removal of the centerboard and by the bolting of the lead ballast, that was formerly inside the hull, to the bottom of the keel. This in-

creased the draft

by about 18 inches and, of course, improved the stability on a given displacement. The changes in the sail plan consisted of an all-round shortening of the spars, several feet being taken from the main boom, and the mast being reduced about 7 feet. In her altered conditions she will be better suited to the strong winds and rough water of the English coast.



Match Lighter Set, with Cap on Hood, Ready to be Released by Alarm Clock.



Match Thrust Forward on End of Rod, After Latter Has Been Released.

AN INGENIOUS AUTOMATIC DEVICE FOR LIGHTING A FIRE.

Apparatus Complete, with Exception of Hood,

Showing Match in Place Above Scratching Plate.

The "Ingomar" will find herself in British waters at a very opportune time for the capture of the cup, inasmuch as there is no thoroughly modern craft in those waters to meet her. The cutter "Kariad," a Watson boat, about four years old, might sail against her, or the yawl "Sybarita," which is a year or two older than the "Kariad." A new schooner is being built and designed by Fife, which will be about 20 feet shorter on the waterline than "Ingomar;" but it is not likely that she can save her time allowance against a boat so much larger. At the same time there are some of the older schooners that are fast in a blow, and if there should be some strong winds and choppy seas

during the contests, the "Ingomar" may find the competition keen enough to provide some very enjoyable sport. The probabilities are that she will win the cup, which is the chief object of her quest. She has the great advantage of being sailed by Capt. Barr, who will find himself in waters with which he is perfectly familiar, and in which he learned the art that has

brought him into such world-wide prominence.

AUTOMATIC MATCH LIGHTER OPERATED BY ALARM

The automatic match lighter shown in the accompanying illustrations is the invention of Mr. E. Max Gotterman, of Melbourne, Australia; and it is an exceedingly simple yet ingenious apparatus, capable of being put to various uses. The apparatus consists of a mechanical arrangement for lighting a match at any desired time, the releasing of the match-moving mechanism being accomplished by an ordinary alarm clock. For this purpose, the alarmwinding thumb-piece is enlarged so as to form a lever that will strike and release a catch which in turn releases a coiled spring that suddenly pushes a matchholder over a piece of sandpaper, thus lighting the match. The lighted match is thrust beneath the grate of a stove, and lights the fire. It can also be made to

light a candle, a lamp, or a gas stove, in the same

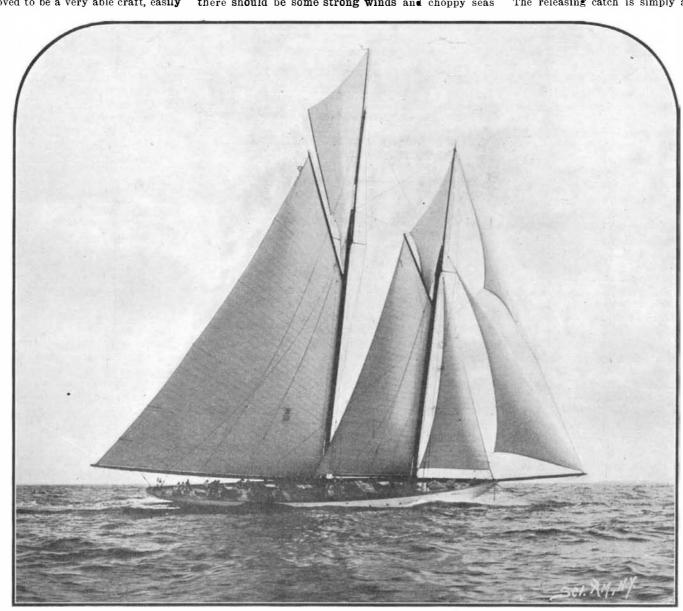
The whole arrangement, as shown, is mounted on a bracket that slides on a vertical rod extending upward from a pedestal, and the bracket can be clamped at any desired position on this rod.

The small lever attached to the alarm-winding thumb-key of the clock is curved so as to strike the curved releasing catch, as seen in the illustrations. A regulatable stop screw is arranged on the bracket and can be set to stop the curved thumb-key lever after it has struck the releasing catch. The releasing catch is simply a curved wire fastened

in a central pin that is contained in a sleeve within the center cylinder. Both sleeve and cylinder are slotted so as to allow the curved wire releasing catch to slide forward with the central pin, when the former has been pushed out of a notch at the rear end of the slots by means of the lever on the clock.

Outside of the central pin, which slides in a sleeve, and between this sleeve and the outer casing, is a strong coiled spring which presses against the curved wire releasing catch, and through it, pushes the central rod ahead when the catch releases.

A spring bumper is placed within the cylindrical case, at its forward end, for the purpose of cushioning the central pin and stopping it without an extremely sudden jar, which might extinguish the match.



Length on waterline, 87 feet; Length on deck, 127 feet; Beam, 24 feet; Draft, 16½ feet.

YACHT "INGOMAR," CHALLENGER FOR THE CAPE MAY CUP, NOW HELD IN ENGLAND.