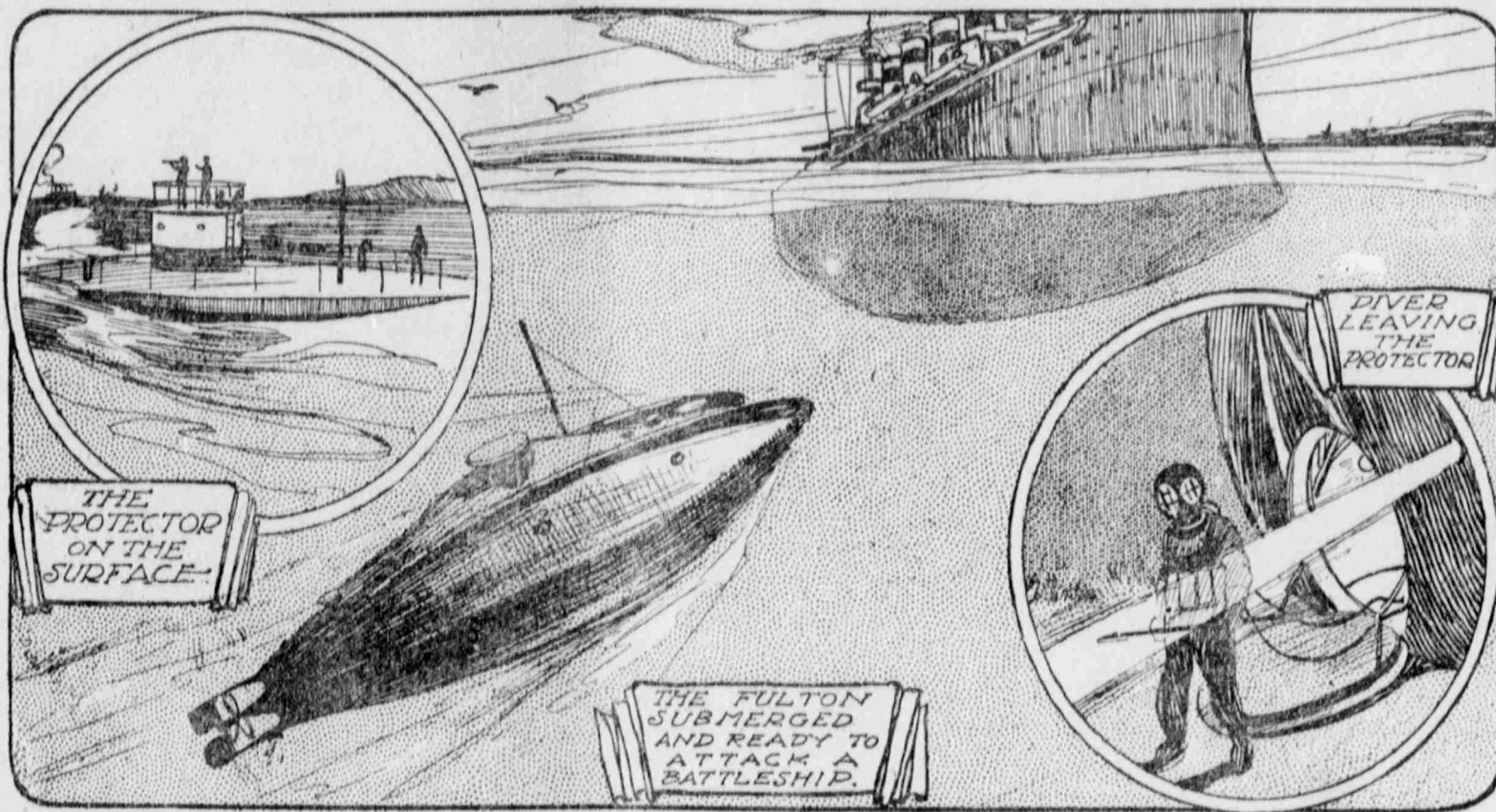


AT

merits of her predecessors, the Adder, the Shark, the Porpoise and others of the Holland type which the government already owns. The board is also of the opinion that she is superior to those boats in several important particulars.

The difficulties in the way of submarine navigation have been so numerous that it was felt by naval engineers there much had been accomplished when within recent years they had been reduced to five—difficulty of securing safety, of obtaining fair speed, of directing, of securing and of discharging the torpedo. The Fulton has eliminated the problem of safety. As to speed, it has been found that an excess of ten knots when submerged is not to be accomplished as yet. The motor most available for under water service has probably been the subject of more discussion and experimentation than any other point connected with this species of navigation. Storage batteries as at present constructed are too heavy, steam is out of the question for obvious reasons, and the other usual means of propulsion are equally inefficient in subsurface navigation. The most feasible motor now found in gas engines is the one which develops high pressure by means of explosions. Until recently it was impossible to keep the exhaust gases from escaping into the boat. There was also the danger of detection from the escaping bubbles and the smell of gas. As to steering, there remain obstacles yet to be overcome. When submerged it is not possible to see more than 100 feet in advance even when at rest; when the boat is in motion the difficulty is greatly increased. The Fulton is provided with a sensitive compass which will give warning of the approach of a hull of copper, bronze, aluminum or iron. The compass is also sensitive. The most important device, however, is the periscope. It is in reality a sort of circular camera. When those below wish to find out what is going on above the water they thrust it upward through a circular opening in the top



lowers can be used when cruising near the surface, and the top may be opened if the weather is fine. In most boats the opening in the conning tower forms the principal way of ingress and egress.

To secure a reasonable habitability in a submarine boat was a problem that baffled constructors for a long time. The recent test of that feature on the *Fulton* demonstrated the fact that the little cabin of that craft is quite as safe as quarters on a battle-

ship. Until now there has been little effort made either to warm or cool these boats. Hitherto it has been possible to remain in a submarine craft only a short time without experiencing discomfort from the change of temperature. Besides this, there has been no adequate provision for eating and sleeping, and the light has not been good enough to admit of accurate observation. All this has been overcome. The Fulton went down in one of the slips at the torpedo station at a few

minutes before 11 o'clock one evening and reappeared next morning at a few minutes past 11, the test having covered a little over twelve hours. The nine men who spent the night at the bottom of the slip not only ate, drank, talked, read and played cards, but cooked, lighted their apartment brilliantly with electricity and might have warmed it with the same agent. The subaqueous revelers declared that they could have remained submerged for ten days.

Perhaps the greatest difficulty of all is to be encountered in the discharge of the torpedo. In addition to the confined space in which torpedoes are operated and the difficulty of giving them the correct direction at the time of firing, it is necessary that the torpedo should be nearly horizontal at the moment, else the torpedo will take too deep a dive or rise to the surface at the beginning of its run. The shock of firing also causes great longitudinal disturbance in the boat. The tests made with the Fulton show that much of the trouble formerly experienced from this cause has been overcome.

It is, of course, unfortunate that Lake's latest improvements in submarine navigation were not made public by the recent tests. The design of the department was to show the utmost fairness in the matter of a choice, and the only condition of competition was arranged. Since the eastern complication came to a focus, and for a long time before that period, both Lake and the Holland company have had abundant opportunities to put their inventions into active service. It would be an interesting coincidence if the two little destructive agents should now see active service on opposing sides.

When or by whom the first submarine boat was built will probably never be known. Alexander the Great was interested in subaqueous navigation, and it was suggested in the thirteenth century. In 1372 some English ships were destroyed by a large New York harbor. Lee actually got under the ship, and the attack failed only because the screw with which the torpedo was to be attached to the bottom of the Eagle was not sharp enough.

EDGAR W. JONES.

Probably Have the White Scab
of Dandruff on It.

If your coat or shoulders have
white spots upon it, the chances are that
it is from dandruff. The only way to
permanently remove dandruff is to remove
the cause, which is a germ. Newbro's
Herpicide kills the germ. Every tell tale
spot should have such a hair dressing
which contains also the destroyer of every
dandruff and hair falling germs. It
relieves irritation, keeps the scalp
cool and pure, and is just what
that something wholesome. Remember
"good," will not do the work of genu-
ine Herpicide. Sold by the bulk of genu-
ine. Send 10c. in stamps for sample
The Herpicide Co., Detroit, Mich.
C. M. I. Drug Co., Special Agents, 12

United Mine Workers.

Wilkesbarre, Pa., July 12.—At this morning's session of the United Mine Workers' convention at Pittston, the auditing committee made its report and various committees were appointed. The convention, in the afternoon, was presided over by Frank C. Conyers of theripple Creek district, Colorado, with reference to the miners' union there, his convention was in session nearly all day with closed doors. The president of the United States, President Roosevelt to meet a committee sent from the Central Labor union was not rough before the convention, but it was discussed by the delegates outside of the hall. Many expressed indignation.

laid stress on the fact that it left Germany isolated. "Now an agreement with the United States and the British Commonwealth squadron at Plymouth are proofs that Germany is not isolated."

The Standard, while not taking the treaty as an outcome of King Edward's visit to Kiel, says it is an appropriate sequel to that meeting. With a few such sentences the Standard proceeds to dilate on the stability and advantages of the Anglo-French entente. The Anglo-American comment on the Anglo-German treaty.

Kansas Waters Falling.

Topeka, Kan., July 12.—Hills received tonight from Salina and Junction City that the Smoky Hill river

It's Easier

FREE Write to us for Free Trial Package of Dr. Miles' Anti-Pain Pills, the New Scientific Remedy for Pain. Also Symptom Blank. Our Specialist will diagnose your case, tell you what is wrong, and how to right it. Free. DR. MILES MEDICAL CO., LABORATORIES, ELKHART, IND.

being registered.

you. No drugs or electricity; 75,000 cured and developed. 10 DAYS' TRIAL. Send for free booklet. Sent sealed. Guaranteed. Write today. R. P. Emmet, 103 Tabor



Another new one, 'twill be ready for the market August 15. The style of package and name is being registered.