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TO BE BLOWN ACROSS THE OCEAN IN 24 HOURS

No Engines, Not Even a Turbine Wheel, In This Remarkable Craft, Which Inventor Rider Claims Will Travel 120 Miles An Hour.

The wonderful Stanley steamer which travelled one mile in 26⅘ seconds. It is now claimed that the performance of this racer will be equalled by the new two-mile-a-minute steamship.

A BOAT has been designed on the plan of a rocket to fly across the ocean virtually without engines. The kick of an explosion, which one feels even in a pistol, and is strong enough to convert a rocket into a flying machine, is relied upon to drive an ocean liner at 100 to 150 miles an hour.

There will be no propeller or paddle-wheel, nor will there be a great engine room full of gleaming, flying steel. In fact, there will be no engines at all unless a long water pipe running from the bow to the stern, and a half dozen explosion chambers or cylinders can be called engines.

Instead of gases generated by burning gunpowder, which drive the rocket, the more economical and easily controlled gases derived from kerosene oil will be used.

The gas mixed with air is a powerful explosive. The mixture is driven into the explosion cylinder under high pressure. An automatic electric device fires the mixture by means of an electric spark. A vicious explosion results and the forming gases shoot into the water pipe as if from the mouth of a cannon.

The blast drives the charge of water out of the pipe as if it were a charge of shot and the kick sends the boat ahead, but driving the water from the rear end of the pipe causes a vacuum into which more water rushes in from the bow in time for the next explosion.

Pulled by Cable of Water.

The suction at the bow pulls the boat as much as the kick behind does. The ship can be imagined as pulling itself along a cable of water, for the water driven through the pipe practically amounts to a cable of water.

The inventor, Herbert C. Rider, of New York City, claims his cylinders will work at the rate of 2,000 explosions to the minute. But he has found it more practicable to reduce the number of darkness to about 50 per minute for each cylinder and have two cylinders for a small launch and a dozen or more for an ocean liner.

Mr. Rider, who invented the system of underground tunnels to use in New York City, has had this "rocket" motor on his mind for three years. Last Fall he installed an experimental outfit in a small scow and tried it on the North River. Although he had the angle of the cylinder to the tube wrong, the little motor developed discernibly unexpected power.

Made Unwieldy Scow Race.

Instead of the expected eight miles an hour, the cumbersome scow scudded off at about twelve miles an hour and rapidly increased to sixteen. At this point the water passed over the bow and though the engine was eager and willing it was hastily stopped.

A steep wave, kicked up by the explosion, caught up with the craft when it stopped, also rolling over the stern added to the troubles of the experimenters.

The inventor has corrected the angle of his cylinder and pipe and now thinks he can, estimate the possible speed it will give to ships.

According to his figures, an ocean liner fitted up at one-tenth the expense, and employing one-eighth of the present space devoted to engines, boilers and coal bunkers, would cross the ocean in twenty-four hours. This would mean a speed a little in excess of 120 miles an hour.

His figures show a possible speed of 150 miles per hour. But he has reduced the figure, to be, as he says, conservative.

Whether a ship can be built strong enough to stand the shock is a matter of theory. A succession of large waves striking at quick intervals with a speed of 120 miles an hour would certainly crumple up the bow of any ship now afloat.

Perils of High Speed.

How a ship could be guided at such speed is an equally serious problem. The deck would doubtless be drenched with spray flying at 120 miles an hour. A splash of water as much as a bucketful, say, travelling at this rate, would break a man's neck if it struck his head. And a few drops striking his eyes would blind him perhaps permanently. Automobile goggles would be too dangerous, as a tablespoonful of the flying spray would break the glass into splinters.

Passengers would stay below or behind shelters during the short trip. Near the bow on top of a strong military coat the lookout and steersman would stand far enough forward to avoid the flying spray. This lookout and pilot house would be roughed through the inside of the boat.

International law would have to be altered about such racing. Monster ships which would appear in a blood of spray on one horizon and sinuous insects disappear in a whirlwind of fire and steam over the opposite waters' edge would hardly be popular among sailing and steam craft. These latter could be expected to take the point of view of the owners of cattle toward the first railroad trains. Small boats would be run over more frequently than at present and perhaps even whalers would lack the pressure of mind to dodge these new monsters. Colliding with a whale is no joke even at our present speed.

What radius however would not jump at the chance of a 120 mile an hour warship. No torpedo boat could catch her of various made of the same type of engine and the swiftest torpedo would be left behind if it is not possible to make these as the same plan.

It is impossible to reverse the action of the cylinders. In order to reverse or quickly stop the boat a few cylinders patterning in the opposite direction are needed. These will remain inactive until occasion arises to stop the ship suddenly. Then the regular cylinders will stop firing and the reverse cylinders begin sucking water in at the stern and shooting it out of the bow.

Mr. Rider has built an eighteen-foot St. Lawrence skiff in which a small motor is to be installed and the boat will be exhibited at the coming Sportsmen's Show in New York City. The motor that is employed is a long piece of pipe four inches in diameter. Lately a demonstration was made of it kicking abilities. The cylinder was charged with gas and air and then exploded. The noise was like that made by the firing of a three-pounder and the water was driven out of the pipe with such force that it threatened to flood the whole floor. In the basement in a restaurant, and when Mr. Rider began his experimenting the water flooded the restaurant. Now he has to be careful, and after one explosion has to wait for the water to settle down.

On this page is shown a photograph of the experimental explosion cylinder rising up from the pipe which is immersed in a long trough of water.

One explosion suffices to put all the water from the second end of the trough and hurl it against the further end. The further end is surrounded by a high metal hood, but in spite of this precaution a single explosion makes the task overflow, while two discharges bring the restaurant keeper from the floor below with blood in his eye.

Rival for Stanley Auto.

The explosions in each cylinder can be repeated just as the explosions in an automobile or power boat engine can be continued. Kerosene is used on the theory that it is safer than gasoline and can be exported more easily. One cubic foot of oil can be reported into 2,700 cubic feet of gas, and in charging the cylinder one part of gas to five parts of air is used, so it can be seen how charging the motor can be run.

At present the big steamship scheme is only thought of, but Mr. Rider is sure that the motor will be a success in small boats, and also will be as economical that it can be employed on any vessel.

Associated with the inventor in his dream of world's and glory are ex-Alderman Joseph C. Wood, ex-Assemblyman H. C. Lincoln and John J. Golding, all of New York City. Next Spring is to see a definite vessel of the new type which is to break all speed records or "blast."

The wonderful 20-horse power steam Stanley with the boast of speed at the rate of 127.65 miles an hour would be a tired racer, has contracted to deliver a car next Winter which will do a mile in 26 seconds, or at the rate of 140 miles an hour.

While the Rider motor was being tested recently an inventor with a still stranger idea was on his way to New York from Washington. One inventor proposes to drive a boat at tremendous speed through the water. The other, from Bridgeport, Conn., has plans to drive water at a still greater speed through the land, and at the same time make it convey passengers.

The scheme is to lay two six-foot steel pipes between the cities of New York and Washington and fill them full of water.

Great pumping stations along the double pipe would, Mr. Rappenthin thinks, make the water flow back and forth between the cities at the rate of four miles a minute.

As time is unquestionably nearer to the transportation problem as much as any other, the inventor expects to get his share by allowing passengers to get into his tube and be squirted from one end to the other.

Four Miles a Minute.

Specialized air-tight coaches, made to fit the inside of the tube, are planned for these hurry-up passengers. Waiting his turn in the outside office of a New York exploition where he hopes to interest, Mr. Rappenthin described his idea.

"The passenger," he said, "takes themselves in a cushiony position in the car, strapped in securely, and the car is pushed forward until it strikes a decline. When it dashes into the canal and is immediately carried by the tremendous current that bears it off New Yorkward at the rate of about four miles a minute. When the conveyance reaches the receiving station at New York the car is caught upon a smooth wooden floating, the friction on which rapidly but easily slows it down and brings it to a stop.

"My scheme will enable a man to go to New York in time for breakfast every morning. All he has to do is to go to the station, get into one of the velvet-lined carriages, allowing himself to be strapped down, and then get up and step out of the carriage upon the streets of Gotham. For getting about, this method, in my opinion, will outclass any slightly or other that has ever been suggested. I have not yet perfected my model or arrived at a definite estimate of the cost of constructing this monstrous interstate canal yet, but I am enthusiastic, and if my imagination does not run out, I'll turn it over to public use within a few years.

"Shuttling persons back and forth in this expeditious manner will bring New York City and Washington close together and work a big saving in time to men whose hours are valued at more than dollars.

"An advantage of this mode of transportation is the small expense after the canal has been built. It would require many millions of dollars and probably many years work to complete the enterprise. In fact, I would be a regular Panama Canal Job. But the profit, when the work is done, will be almost as remunerative, and, therefore, I expect to find no trouble in securing financial backing."

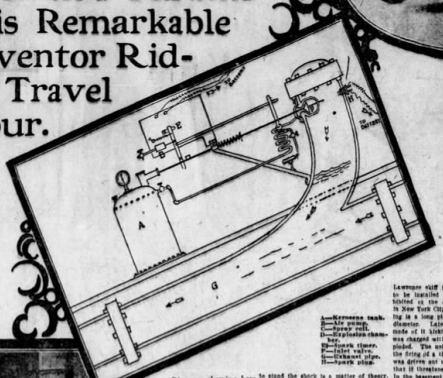
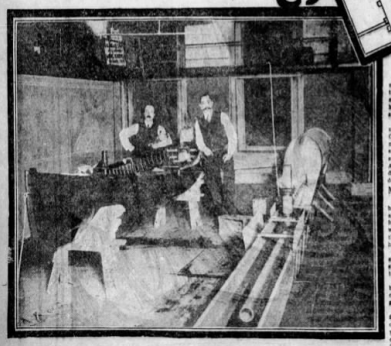


Diagram showing how the new Rider explosion motor works.



Inventor Rider (on the left), and his experimental boat and tank where the marvellous propelling forces of his new motor were tested.

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