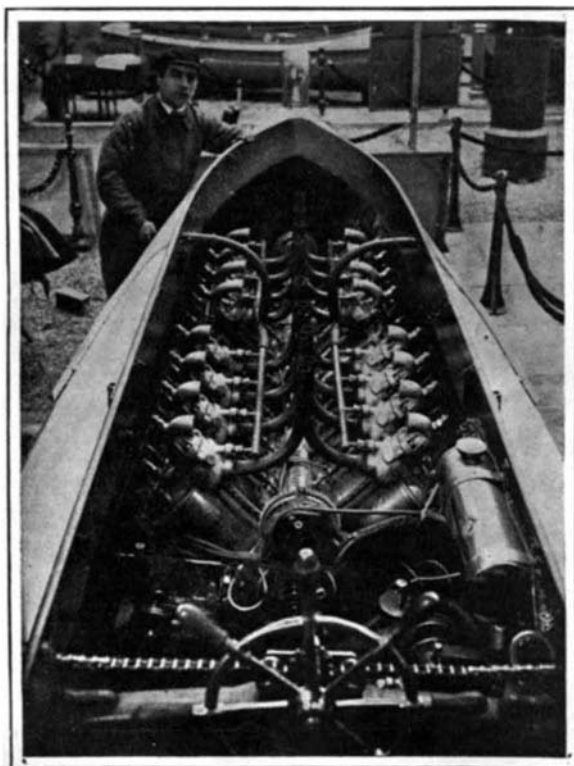


A SIXTEEN-CYLINDER MOTOR-BOAT ENGINE OF 180 HORSE-POWER.

The new 8-cylinder gasoline motor which has been brought out at Paris by M. Levassieur, has a number of novel features. Our illustration shows two 90-horse-

power motors connected in tandem on the launch "Antoinette," one of the prize winners of the season. By the use of eight cylinders great steadiness of power is secured as an impulse is obtained every one quarter of a revolution, and hence the flywheel can be dispensed with. Another great advantage lies in the fact that the motor can be run in either direction by the placing of special cams upon the cam shaft. By pulling a small handle located at the end of the cam shaft, the cams are shifted and the motor is reversed. The constructors claim that the new motor thus has the advantages of a steam engine.

Before dipping into the precise details of the boat to be described, it may not be amiss to state that the question of the use of a duplicate plant in its entirety is one now receiving much attention from designers and users alike, and the trend of motor-boat construc-

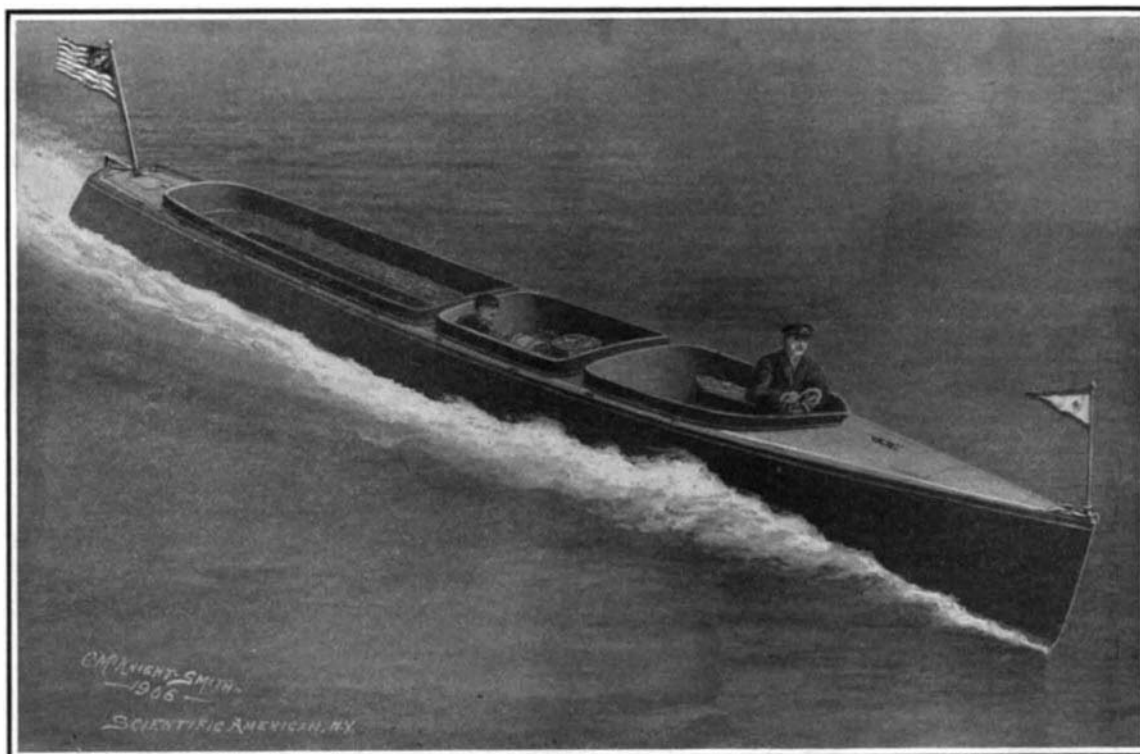


TWO 90-HORSE-POWER, 8-CYLINDER MOTORS CONNECTED IN TANDEM IN THE RACER "ANTOINETTE III."

power motors as mounted in tandem on the launch "Antoinette," one of the prize winners of the season. By the use of eight cylinders great steadiness of power is secured as an impulse is obtained every one quarter of a revolution, and hence the flywheel can be dispensed with. Another great advantage lies in the fact that the motor can be run in either direction by the placing of special cams upon the cam shaft. By pulling a small handle located at the end of the cam shaft, the cams are shifted and the motor is reversed. The constructors claim that the new motor thus has the advantages of a steam engine.

The carburetion is produced by a small gasoline pump worked from the motor. It draws gasoline from the tank and sends it to eight small distributors placed at the top of each motor on the inlet. These regulate the supply of liquid, causing the spray action which is needed. The output of the pump is variable at will, but its automatic action is preserved, as it is run from the motor. Good carburetion is always secured in this way, and the method has an advantage in suppressing a large amount of piping.

The new "Antoinette" motor consists of eight cylinders mounted four on each side and at an angle of 45 degrees upon a crank case, as will be noticed. The eight cranks work on a single shaft. A cam shaft works the eight exhaust valves. What is to be remarked about the new motor is its great lightness in proportion to the power it will give. The 90 to 100 horse-power motor, having a 5.2-inch bore and stroke, weighs but 330 pounds, not including the reversing mechanism and ignition devices. With the latter, the weight is 370 pounds. It measures only 32 inches long and somewhat less in height. The great advantage of the motor when applied to a launch lies in the fact that it can be used to operate the propeller di-



A NEW TWIN-SCREW SERVICE BOAT FITTED WITH TWO SEPARATE POWER PLANTS OF 30 HORSE-POWER EACH. THIS BOAT IS INTENDED FOR USE ON LAKES AND RIVERS

tion is toward more power, greater safety, and immunity from any serious inconvenience in the event of a mishap to any of the equipment. At first it was thought the best way to obtain more power was to put two motors in "tandem." A few attempts at this arrangement put an end to it entirely, except in cases, like the "Dixie" and the "Challenger," involving the design and construction of eight-cylinder motors with integral bases and especially designed crankshafts, as well as an arrangement of accessories to match.

A SERVICEABLE TWIN-SCREW MOTOR BOAT.
BY THOMAS J. FAY, E.E.

Twin-screw motor boats, if not altogether new, are quite rare, to say the least. This is not because the principle of twin-screw propulsion is in any way in question, but because motor-boat work did not grow up to the level of twin-screw products until very recently.

tion is toward more power, greater safety, and immunity from any serious inconvenience in the event of a mishap to any of the equipment.

At first it was thought the best way to obtain more power was to put two motors in "tandem." A few attempts at this arrangement put an end to it entirely, except in cases, like the "Dixie" and the "Challenger," involving the design and construction of eight-cylinder motors with integral bases and especially designed crankshafts, as well as an arrangement of accessories to match.

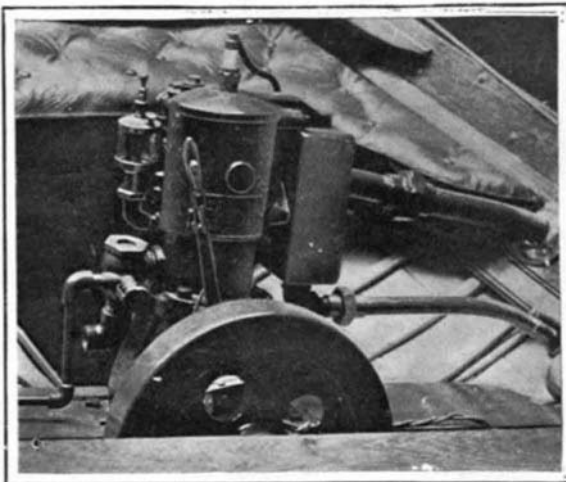
This, however, is altogether different from putting two motors in tandem and coupling their crankshafts together; for, as anyone can see, the crankshaft, barely large enough to sustain the power impulses of its own four cylinders, would be practically useless after sustaining the extra effort of four more cylinders for even a short while.

The best way, without any doubt, to realize the fullest benefit from the use of eight cylinders is to employ two motors in such a way as to afford two complete and independent power plants, even to the extent of employing two separate and distinct fuel tanks, and of course two screws, not to mention the attending accessories.

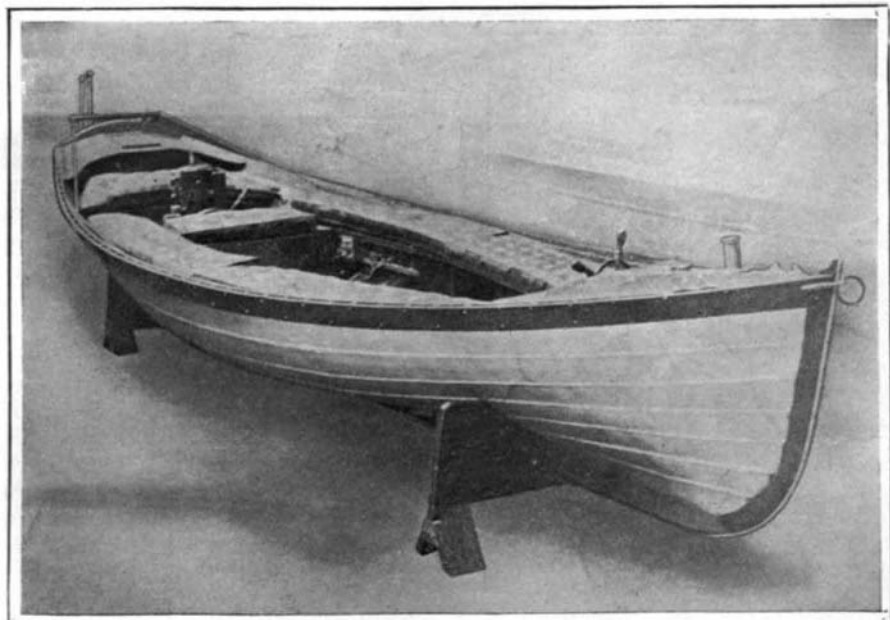
It is the purpose here within the brief space afforded to point out the most conspicuous features of one of the latest creations in the Simplex series. The main dimensions of this twin-screw boat are as follows:

HULL DIMENSIONS.—Extreme length, 45 feet; Load-water length, 44 feet; extreme beam, 6 feet 6 inches; water line beam, 6 feet; draft, 10 inches; propeller draft, 2 feet 5 inches; approximate speed, 20 miles per hour.

MOTOR DIMENSIONS.—Number of motors, 2; rated horse-power of each, 30; total rated horse-power, 60;



A SIMPLE 1½-HORSE-POWER, 2-CYCLE LAUNCH MOTOR.



LIGHT, CHEAP, AND SERVICEABLE STEEL LAUNCHES FITTED WITH AIR TANKS WHICH MAKE THEM UNSINKABLE.