

bunks, cooking arrangements and lockers for dishes and stores. The engine room is five feet long, and contains, besides the power plant and tank, tool lockers and a complete lighting outfit, which supplies light to four points in the cabin and the side lights. The main cabin is eleven feet long and spacious. There are comfortably wide side benches nicely upholstered. The finish is white enamel with mottle kauri panels. There are ten brass screw ports for light and air. The cockpit and sides of the house are finished in imitation teak. Outside, the topsides are finished with white enamel with a gold band. The raised deck is painted dark green with gold scroll and name. Her speed is nine knots.

Quite the handsomest tuck stern craft that I have seen for some time is the "Mollie," recently built by Lanes for Capt. Somerville. In addition to her looks, she has very comfortable accommodation, and the respectable speed of  $9\frac{1}{4}$  knots, or over  $10\frac{1}{2}$  miles. She is wonderfully handy, all controls being at the wheel, so that she is practically a one-man boat. Her 4-cylinder Scripps runs as sweetly and noiselessly as the proverbial sewing machine. The fore-cabin contains two galvanised stoves permanently located forward, under the hatch, where the smell of cooking can escape. There are ample lockers and a wardrobe, besides two good bunks in this compartment. The engine room also contains a berth besides the plant and tank, lighting outfit and switchboard which supplies light to five points. The saloon is 12 feet long, and is lighted by ports and skylight. The cockpit, which is specially commodious, is seven feet long, and, like the sides of the house, is finished in imitation teak.

Another boat recently finished by Lanes for an Auckland yachtsman is engined with an eight-cylinder Antoinette engine. She is 35 x 9 x 2ft. 6in. Finished in Lane's usual style, she should be comfortable and speedy when her engine gets running well. She is something similar to the "Mollie."

\* \* \*

Messrs. Bailey & Lowe have just launched a fine tuck stern auxiliary centre-boarder for Mr. Percy Dufaur. She is 25ft. over all by 10ft. beam by 2ft. 6in. draught, and is of single skin construction,  $\frac{7}{8}$ in. planking. The engine, a 4 h.p. Kapai, is in the cockpit, which is very roomy. There is 4 feet headroom in the cabin, and sleeping accommodation for four on the side benches. A table is hinged to the centreboard case, which is lead lined. She is rigged with a mainsail, jib and staysail, and should give a good account of herself under sail, while the engine will take care of her when the wind fails.

\* \* \*

Niagara Motors are the four-cycle type, and are made in two, four and six cylinders, five to ninety horse power.

The design is simple and symmetrical, devoid of superfluous, intricate or complicated parts, which easily get out of order and result in endless annoyance and expense.

All Niagara parts are made with the use of jigs and gauges, and are therefore uniform and of standard size.

Large handhole plates are provided in

crank cases, making it a simple matter to get at crank, shaft and connecting rods. All cylinders are cast separately, they are readily removable, admitting of easy access to pistons. It is so simple and uncomplicated in its construction that a child can operate it. There being no superfluous or intricate parts, there is very little to get out of order. The bearings, cylinders and pistons are lubricated by a positive feed mechanical oiler, the flow of oil being regulated by speed of motor. All motors are fitted with this type of oiler, which is considered far more dependable than gravity oilers, and they require practically no attention after the reservoir of the oiler has been filled. In addition to this method the splash system is also used.

These motors can with truth be called noiseless motors. This is largely due to the gears being enclosed within the crank chamber, thereby deadening the noise and preventing the possibility of accident in connection with the gears.

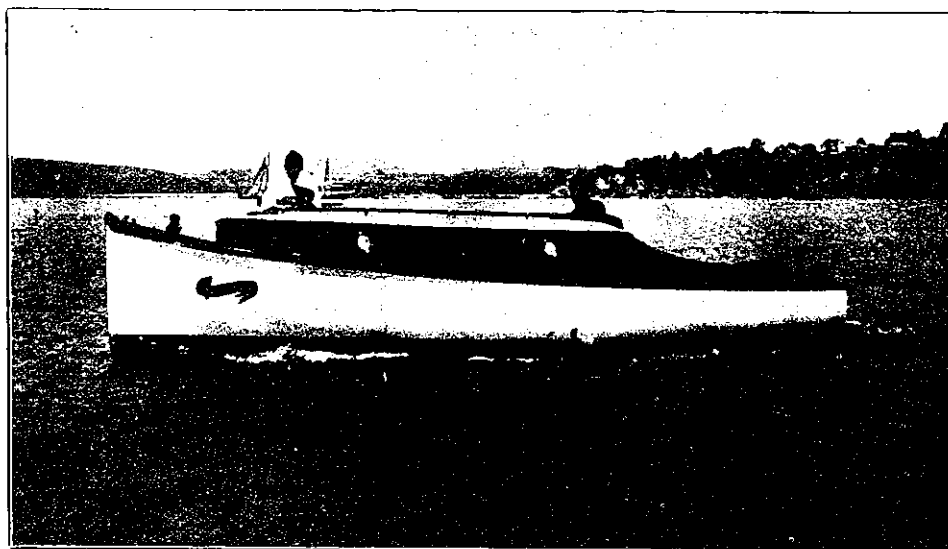
The crank shafts are made of open hearth, thirty-five point carbon steel, and are hammer forged. They have extra long bearings of large diameter. The

which admits of more perfect water jacketing, and should a cylinder become damaged, it is not necessary to discard or replace more than one cylinder. Valve openings are on opposite sides, thus making it possible for the exploded gases to be entirely cleared from explosion chamber before the fresh charge is taken in.

The pistons are made of superior gray iron. They are extra long, which insures long life and prevents "slapping" in the cylinders. They are fitted with four rings, three at the upper end and one at the lower end. The pistons, as well as the rings, are ground to size on special grinder designed for this purpose.

The exhaust manifolds are completely water jacketed. The circulating water, after leaving the cylinders, passes through the water jacket of the exhaust pipe, thereby keeping the latter cool.

The reversing gear clutches are of the planetary type, and are made to meet the requirements of severe service. The gears are cut from solid, especially treated, gear steel, and are fitted with long bronze bushings. The driving gear is keyed and shrunk on to the shaft, after which it is ground to size and the teeth



LAUNCH "NIAGARA," 5 h.p. Niagara, speed 7 miles.

C. Bell, photo.

two cylinder crank shafts have three bearings, the four cylinder crank shafts have five bearings, and the six cylinder shafts have seven bearings. Very special attention is given to crank shafts, the bearings being finished until their surface is as smooth as glass.

The valves are made with cast iron heads welded on steel stems, which have an advantage over the all-steel valves, as they prevent the pitting of the valve seats.

The valve springs are made of special oil-hardened steel, and will not set, or lose their rigidity.

The connecting rods are made of manganese bronze and steel, they are adjustable at both ends, thereby making it easily possible to take up any lost motion due to wear, thus saving expense of new piston pins and bushings. The upper ends of the connecting rods are fitted with phosphor-bronze bushings of ample width, which are readily removable should occasion require. The bearings in lower end are die cast, made of "Superior" babbitt. These bearings are easily removable.

The cylinders are made of the best of gray iron. They are cast separately,

cut, making a perfect alignment, which result is not possible by the usual method of finishing the gear and then keying.

\* \* \*

Messrs. T. H. Whitson & Co. report the following sales of marine engines:—18 h.p. double cylinder Union to Mr. T. Johnson, of Helensville, for installation in a 40ft. towing launch; 7 h.p. double cylinder Union to Messrs. Hudson & Biddock, for a 28-foot pleasure launch; 3 h.p. Union to Mr. J. Fell, of Kohukohu; 3 h.p. Ferro to H. Burgess, of Devonport, auxiliary power for a mullet boat; 10 h.p. Union to Mr. R. Saxby, of Opotiki, for a 32-foot working boat—this is the second Mr. Saxby has had within the last few months; 10 h.p. Union to Mr. J. F. Nicholls, of Wanganui, for a pleasure launch; 11 h.p. double cylinder Ferro to Mr. H. Bates, of Hamilton, for a 35-foot pleasure launch on the Waikato River; 6 h.p. Clifton to Mr. D. Abraham, of Batley, Kaipara, for a pleasure launch;  $7\frac{1}{2}$  h.p. Ferro to Mr. W. Arnold, of Onehunga, for a pleasure launch; and a  $4\frac{1}{2}$  Ferro low-tension type to Mr. Friedlander, of Onehunga, for a pleasure launch.