

be lowered to act as leeboards, and drawn up when nearing shallow water. When loaded with twenty-four adults draws only 21in. Occupies no extra space on ship's deck. Ordinary boat-davits can be used. Increases life-saving apparatus 25 per cent., and costs 50 per cent. less than an ordinary ship's lifeboat. It can be utilised for troop-ships and be towed by a steamer without danger. Steers as well as any boat. It is claimed that the raft cannot be capsized, and, even if it did so by any chance, the then uppermost side could be rigged with sails, oars, &c., thus having the advantage of being reversible. The raft is fitted with a sea-anchor, so as to heave-to in a heavy sea-way. A public trial of the raft was made on 12th July from H.M.V.S. "Lady Loch," in the presence of the Hon. the Minister of Trade and Customs, the Victorian Steam Navigation Board, and the Pilot Board. The test on all points was considered very satisfactory. This decision has since been indorsed by the official report of the Steam Navigation Board, now to hand.

Mr. J. T. Hart, of Wellington, exhibits an ingenious eliminator named "Hart's course and bearing deviation-eliminator," an appliance for clearing courses and bearings by compass on ship-board of error due to deviation.

Mr. T. W. Hickson, of Invercargill, exhibits mosquito-tents for beds, gardens, and verandahs. These afford perfect protection from mosquitos, fleas, bed-bugs, and every other kind of insect, without any of the inconveniences connected with ordinary mosquito-curtains. Lights, chairs, tables, and other conveniences may be introduced within the tent; so that, once inside, all the advantages of an ordinary bedroom may be enjoyed. In the bed-tent the bedstead remains outside the tent, but the mattress and bed-clothes are all inside.

Mr. W. Douslin, of Blenheim, shows a patent lock-spindle and method of attaching same to knobs, which is admitted to be the best yet manufactured. It can be adjusted to the hundredth part of an inch. It is impossible for the knobs to come off the spindle. The spindle has a thread at each end, one finer than the other, so in adjusting the length you may turn the knob with the fine or coarse thread. It will be observed that the slots in the spindle are cut on the reverse side, which allows it to be adjusted at every half-turn with either knob. The small screw passing through the knob and slot in the spindle renders it completely secure. It is adapted to most descriptions of locks, and a child could fix it. It is very cheap; the knob and spindle complete is being manufactured for 7d. each.

Mr. D. W. McArthur, of Hokitika, exhibits an automatic safety window-fastener, so constructed as to make it impossible to be unfastened from the outside of a window. When opening the window, take the trigger between finger and thumb and draw back, lifting small catch over back of box; then, when opening the window, this trigger is lifted automatically, and leaves "fastener" ready to lock window when it is again shut; the act of shutting window also securely locks same.

Mr. McAlister, of Invercargill, exhibits a side-catch burglar-proof window, and it does everything almost that a window can reasonably be expected to do. And it is so docile, so obedient, so self-contained in its motive-powers, that the owner of it merely requires to press a spring to work the upper half, or to pull the same spring in order to work the lower half. But this is not all. The window may be left partly open for a warm night, and the burglar seeing it is glad. It seems to be a direct invitation for him to step inside and help himself. He catches hold of it gently with both hands to prevent any creaking, and up it goes just one single inch, when, with a click, it is as fast and as firm as the walls of the building. And you may put the controlling spring just as far from the window as you please, and there are no catches to be broken with a cold chisel or forced back by the blade of a penknife deftly inserted. There are no cords to break, no weights to provide, and the springs which control this ingenious mechanical contrivance may be carried in one's pocket, while the inventors hope to put it on the market cheaper than the ordinary window-frame.

Mr. J. Caswell, of Ponsonby, exhibits "Caswell's improved incubator," for hatching eggs from hens, ducks, geese, or turkeys. The drawer for holding the eggs is 24in. long, 19in. from front to back, and 7in. deep, in the centre of which is fixed a perforated zinc tray capable of holding 150 eggs. The boiler is 24in. long, 20in. wide, and 3½in. deep, made of galvanised iron. The water is conducted into this boiler by a tube 1in. in diameter. To the boiler is attached a water-gauge, fixed with a brass tube ¼in. in diameter. The water-gauge is a glass tube fixed at an angle of 22½°, which indicates the quantity of water, and so enables the caretaker to keep sufficient water in the boiler, so that the ventilating and other tubes shall not get damaged. Attached to the water-gauge are three brass taps for emptying the boiler when required. The incubator is supplied with a regulating balance-rod and capsule for regulating the heat, with thermometer made expressly for incubator. The novelties claimed: (1) The drying-box on the top side of the machine above the boiler, marked A. This drying-box is made for the purpose of placing the young chickens in to strengthen them before removal, and has already proved itself remarkable for these qualities; (2) the water-gauge, marked B, to show the quantity of water in the boiler, also for convenience of emptying the boiler when required without interfering with the eggs; (3) the extra size of the drawer, marked C, which is capable of holding fifty eggs more than any machine now patented, and which has hatched ninety-five out of a hundred eggs; (4) the key, marked D, indicates emptying when necessary; (5) general excellence for hatching throughout.

Mr. George Ashcroft, of Nelson, exhibits an apparatus for crushing and pulverising quartz and other minerals, and an apparatus for amalgamating. In this ingenious machine a frictional as well as a pulverising action is exercised by free running steel balls driven by horizontal arms, which can be raised or depressed so as to produce either a crushing or a rubbing effect on the ore as required. This machine is, in fact, a mechanical pestle and mortar of great power, and from its portability and the certainty with which it exhausts, the process of extraction is deserving of attention.

#### *Preserved Meat and Fish.*

As representing one of the principal meat-exporting countries in the world, the exhibits of this kind in the New Zealand Court will attract considerable interest. Six years ago, when the refrigerating industry was first started in New Zealand, the shipment of frozen meat amounted in