

divers' room and the look-out compartment. The engine and living-room is the largest compartment and occupies about two-thirds of the length. The after part of it is occupied by a gasoline engine and a dynamo which drive the same propeller shaft. In cases where the bottom is judged suitable for locomotion, it is proposed to lower the boat until the ribbed wheels rest upon the bottom with sufficient pressure for traction and propel it by means of the forward motor, which is shown geared to the axle of the forward wheels.

The living-room furnishes accommodation for six men. It is provided with an air compressor and storage tanks, the latter placed, as shown in the diagram, near the roof, which serve to renew the air vitiated by the crew and also to supply the divers when they are at work outside the vessel. When the boat is working at moderate depths, air is supplied through two air-pipe masts, which also serve to show the location of the boat and the direction in which it is travelling. At greater depths the pipe masts are closed and air is drawn in through a suction hose connected to a float on the surface. For the greatest depths the hose can be discarded together, and dependence placed upon the air storage tanks. These are of sufficient capacity to supply the crew for a period of forty-eight hours. There is an advantage of course in the use of the pipes or hose in the fact that the boat may remain submerged for an indefinite period of time.

The compartment forward of the living-room is an air lock and is used for giving admission to the divers' room. This room contains a telephone, hose-reel, hoisting engine and all the various tools made use of in wrecking operations. It is practically a divers' workshop with everything provided ready to hand—and instead of his being separated from his assistants he is in close touch with them all the time he is at work.

The forward compartment is practically the pilot house when the boat is submerged. A powerful search light sends a beam of light straight ahead or to either side of the boat.

Entrance is had to the boat through a trap door in the roof, which can be closed down so as to render the boat perfectly dry, even if the surface should be broken with waves. Water is let into tanks to sink the boat and blown out of them when it is desired to rise.

STRANGE STREAMS OF WHEAT.

The "belt conveyers" used to carry wheat in some of the huge grain stores in Brooklyn, are described in the *Scientific American*. They consist of belts, formed of canvas and rubber, thirty inches broad, and running over horizontal rollers. At the point where a stream of wheat falls upon one of these belts, the edges of the



BELT CONVEYERS.

latter are turned up for a short distance by a pair of rollers placed above the general level. But the grain quickly acquires a momentum in a straight line, which prevents it from falling off the swiftly moving flat belt, and thus, in an unbroken stream, it is carried from one end of the great warehouse to the other. When it is desired to discharge the wheat from the belt into a hopper, a movable frame called a "tripper" runs on a track underneath the belt. The tripper carries a roller on each side, one being placed much above the level of the belt; the latter rises in a curve, passing over the upper roller and beneath the lower one, and the sudden change of direction causes the wheat to shoot from the belt into the hopper.

Lord Kelvin holds that the internal heat of the earth has nothing to do with climates. The earth, he says, might be of the temperature of white-hot iron two thousand feet below the surface, or at the freezing point fifty feet below, without at all affecting a climate.

A great photographic camera for taking full-length life-size portraits has been made and used with much success by a Dublin firm. The camera takes a plate seven feet high and five feet wide.

Oil is supplied to light-houses on the Denmark coast to be pumped on the waves during storms.