

used to sail with square-rigged ships, and, with the conservatism peculiar to their class, were of opinion that what they had used was the only thing that could be used in the ice. However, the rig we chose was unquestionably the best for our purpose. In addition to the ordinary fore-and-aft sails we had two movable yards on the foremast for a square foresail and topsail. As the yards were attached to a sliding truss they could easily be hauled down when not in use. The ship's lower masts were tolerably high and massive. The mainmast was about 80 feet high, the maintopmast was 50 feet high, and the crow's-nest on the top was about 102 feet (32 m.) above the water. It was important to have this as high as possible, so as to have a more extended view when it came to picking our way through the ice. The aggregate sail area was about 6000 square feet.

The ship's engine, a triple expansion, was made with particular care. The work was done at the Akers Mechanical Factory, and Engineer Norbeck deserves especial credit for its construction. With his quick insight he foresaw the various possibilities that might occur, and took precautions against them. The triple-expansion system was chosen as being the most economical in the consumption of coal; but as it might happen that one or other of the cylinders should get out of order, it was arranged, by means of separate pipes, that any of the cylinders could be cut off, and thus the other two, or, at a pinch, even one alone, could be used. In this way