As shown in FIGS. 1 to 3, a double mast storage/retrieval machine includes a roof rail 1, a ground rail 2, a pair of masts 3, a carriage 4 and an electric cabinet 5. The roof rail 1 is connected to the mast 3 by an upper beam 6, and the ground rail 2 is connected to the mast 3 by a lower beam 7. A walking mechanism is disposed on the lower beam 7 and moves horizontally on the ground rail 2 to complete the work. The walking mechanism includes a walking motor 8, a walking wheel 9 connected to an output shaft of the walking motor, a driven wheel 10 fixed to the other end of the lower beam, and walking guide wheels 11 fixed to both ends of the lower beam. The carriage 4 is moved up and down along the mast 3 by a lifting mechanism to complete the work. The lifting mechanism includes a lifting motor 12, a winding drum 13 connected to an output shaft of the lifting motor, a steel wire rope 23 wound on the winding drum 13, an upper beam rope sheave 14 fixed to the upper beam, a carriage rope sheave 15 fixed to the carriage, a steel wire rope hanging clamp 16 fixed to the upper beam, and a lifting guide wheel 17 fixed to the carriage. A safety gear 18 is disposed on the carriage 4 for falling protection. An upper and lower limit switch 19 is disposed on the mast 3 for limit position protection. A horizontal limit switch 20 is disposed on the lower beam 7 for position protection and an anti-collision device 21 is also disposed for anti-collision protection. The electric cabinet 5 is fixed to the lower beam 7. A shuttle 22 is disposed on the carriage 4 for completing the picking and placement work.

As shown in FIGS. 1-3, when the equipment of the present invention operates, the walking motor 8 provides power for the walking mechanism, and outputs the power to the walking wheel 9 via a driving shaft installed on the carriage 4, further the walking wheel 9 rotates to drive the driven wheel 10 to rotate to complete the horizontal displacement of the equipment, and the walking guide wheels 11 installed on both sides of the lower beam 7 prevent the inclination of the equipment and play a guiding role. At the same time, the lifting motor 12 in the lifting mechanism provides power output to the steel wire rope winding drum 13 fixed to the output shaft, and transmits the power via the steel wire rope 23 with one end fixed to the winding drum 13, and further the steel wire rope 23 crosses upwards over the upper beam rope sheave 14 fixed to the upper beam 6. Moreover, a rope hole for the steel wire rope 23 to penetrate through is formed in the upper beam, further the steel wire rope 23 penetrates through the rope hole to cross downwards again over the carriage rope sheave 15 fixed to the carriage 4, and converges upwards, at the other end, to the steel wire rope hanging clamp 16 fixed to the upper beam 6, so as to complete the vertical displacement of the carriage 4. In addition, the lifting guide wheels 17 are disposed on both sides of the carriage 4 to roll along the mast to complete the guiding function. At the same time, the shuttle 22 is disposed on the