is to be lifted by one purchase, and one on each side if two are used, and as high up as the shears will allow, the limit being from heel to lashing 6 or 8 feet less than from the lower side of the purchase- block to the deck. Old spars

having been hung over the side

for the mast to rub against and

the purchase fall taken round

the capstan, the mast is hove

up till the head comes above the

gunnel ; then two single blocks

with long-tailed

strops are secured

round it with the

gird-lines of about

4 inches and twice

the length of the

mast ready rove.

The trestle-trees

are now usually bolted on in the mast-house. The gird-line from the shear-head must be bent to the head of the mast at a suitable height to act as a topping-lift. As the mast is hove up by the capstan a stout rope from out­board must be timber-hitched round the heel so as to ease it in as it clears the gunnel, and to haul it towards the partners (mast-hole); when it has been lowered to within 2 feet of the step, a slew rope is passed three times round the mast and a “cat’s-paw” formed on each side, through the eyes of which a capstan bar is passed ready to heave either way as

required ; in the meantime both the heel of the mast and the step should be well coated with white lead or coal-tar. Lower and slew according to directions from below ; when the mast is stepped and brought to the desired

position, place four temporary wedges, rig a triangle, trice it up by the gird-lines, un­lash the purchase or strops, overhaul down, unrig the triangle, and haul the gird-lines taut on each side.

The shears can be transported forward in nearly an upright posi­tion by first pulling the heel-tackles and then the guys, shifting the guys forward one at a time as necessary. The main - mast and the fore-mast are taken in in the same way as the mizzen-mast, described above,—all three abaft the shears ; but, being much longer, they require greater hoist and greater care generally.

To take in the bowsprit the shears are again moved forward, all the heel-tackles being led forward and extra lashings placed on the heels. A purchase nearly as strong as that to be used in lifting the bowsprit should be secured between the fore-mast-head and the shear-head, or two parts of a stout hawser may be used, the middle being clove-hitched over the horns and the ends taken round beams well aft on either side, ready for veering as the shears are drooped (to an angle of about 45°), then to act as the principal support ; the fore-guys are also taken aft to assist. The fore-mast must be wedged on both decks and one or more tackles used to keep the head aft. The bowsprit cap is invariably bolted on in the mast-house ; the bowsprit is then brought under the bows with the cap end forward and slung for the main purchase a little

outside the housing, which is generally about two-fifths of the whole length. The main purchase should plumb nearly the length of the housing outside the bows, and the higher the shear-head the greater the freedom of

motion. The outer purchase attached to a strop through the hole in the cap and the guys from the cap to each cat-head alike tend to force in the bow­sprit when it is high enough ; besides this, a heel rope is put round it before it leaves the water, and a strop with a tackle to the bitts is used to bowse it into the hole and mortise. It is hoisted to about an angle of 45° before the heel is entered.

A rough sketch made to scale will greatly facilitate such opera­tions and ensure success. When a bowsprit is put in by shears on a hulk or jetty, it is hoisted up ahead of the ship nearly hori­zontal, or at the angle (steeve) which it is intended to assume, and the ship is moved ahead towards it, till the bowsprit en­ters in the desired position.

The directions for masting a large ship are more than suffi­cient for masting a small one, which is so much easier.

Gammoning the bowsprit is the most important point in rigging a ship, as the stays of the fore-mast and main-top-mast depend for security on the bowsprit. In large ships there are two distinct lashings (of either new stretched rope or chain) to keep the bowsprit down ; they are passed in a similar manner over a long saddle-shaped piece of wood called a gammoning fish and through the holes in the head knees, the outer one first. One end is clinched or shackled round the bowsprit over the fore-part of the hole ; the