other, being rove through the after-part of the hole, comes up on the aft side of the first turn on the bowsprit and down inside that part and before the turns in the hole, thus forming a double cross with the first turns outside. Every turn is set up as passed by means of a pendant through the hawse-pipe or bow-port, and a block is secured to the hole for the bobstays, which are attached to the gammoning by a selvagee or toggle, and held while the next turn is being passed by a racking seizing if rope and by nails driven through the links into the fish if chain. When the hole is full of turns—eight or ten—the whole is trapped together as tightly as possible, commencing at the lower part.

The clothing of a bowsprit of a large ship consists of nine strops for its own security and the fore-stays. A bobstay collar is hove on at one-third the distance between the night-heads and the outer extremity, and close outside it two bowsprit shroud collars and a fore-stay collar, then the second bobstay collar, two bowsprit shroud collars, another fore-stay collar, and the third bobstay collar ; in addition to these there is a cap bobstay, which sets up to a bolt close inside the bowsprit cap. The bobstay and bowsprit shroud collars are hove on at right angles to the spar and usually cleated in that position. But this cleating is a mistake ; as the strain comes upon each of them very obliquely, it is necessary that they should yield in that direction before the cleats are nailed, or they will give way and slacken the rope when it is most required to be taut. Bobstays are cut to the required length, wormed and parcelled from the centre towards the ends, and served ; they are rove through their respective holes in the cutwater before being spliced, which splice is tapered, parcelled, and served over, and rests on the head of the heart when it is seized in. The bobstays and bowsprit shrouds are set up by lanyards half the nominal size if rope and the same size if wire ; the standing parts are secured by running eyes round the necks of the collars confining the hearts, and are set up by two luffs, one acting upon the other.

The cross-trees are swayed up one at a time by the two gird-lines, whose united action and a guy on deck conduct them to their places, where they drop into recesses and are bolted to the trestle-trees. When a whole top is to be got up it is placed abaft the mast (except the mizzen) with the lower side forward and the fore part upper­most ; the gird-lines are passed under it, that is, before it, each being rove up through the second hole from aft for the futtock- plates and hitched tightly to its own part as it passes the lubber’s hole, which part is also stopped to the hole at the fore part of the top. If it be a large top each gird-line may be taken down the fore (under) side (as before), rove up through the after-hole for the futtock-plate, down through the lubber’s hole, taut up through the foremost hole, and hitched to the hoisting part, which is stopped firmly to the fore part, where a gird-line leading from the mast abaft is also stopped after the end has been made fast to the centre hole for the top-rail ; that gird-line is to keep the top clear of the trestle-trees as it goes up and to assist in placing it. There are several slightly different ways of slinging a whole top ; but in all cases the gird-line blocks (after the stop is cut) hoist the fore part higher than themselves, till.it falls over them and hangs as nearly horizontal as could be judged in slinging it. The final ad­justment of it in its place is done by hand, and then it is bolted to the cross-trees. The mizzen-top is put over either in a similar manner' with a guy to the taffrail or sent up before the mast with the after part uppermost, a gird-line from the main-mast-head keeping it clear of the trestle-trees, which project much farther on the fore side. Tops are taken off by the reverse process ; but it is more difficult to get the hole back over the mast-head.

Tops are now very seldom made in one part, but in two halves, which is more convenient and equally serviceable. Each half is sent up in a similar manner to the whole top ; the gird-lines are bent on precisely the same way, but one half at a time, which falls square at the side of the mast when the stop is cut instead of going over the top of the mast. After the top is bolted, it is advisable to hoist up the lower cap into the top while the whole space of the lubber’s hole is still free, but not to put it on till after the lower rigging is fixed. The cap being placed near the mast with the bolts downwards and the hole for the top-mast forward, both gird­lines are brought down through the lubber’s hole on the same side ; that which crossed before the mast is bent on to the fore part of the cap, and that which belongs to the side on which the cap is lying is made to sling the after part fairly and is then stopped to the fore part, so that this last is hoisted up by both gird-lines end on till in the top, when, the stop at the fore end being cut, the cap hangs in front of the mast and the round hole can be placed exactly over the space between the trestle-trees where the top-mast will come up. A soft piece of wood called a “bolster” is made to fit into the angle formed by the trestle-tree and the mast on each side, and is bolted in place so as to present a smooth rounded surface along the whole distance required for the rigging to rest upon, and is covered by a padding of tarred canvas five or six parts thick, secured by a row of flat-headed nails along the upper side. Each mast is similarly provided.

Preparatory to sending up the lower rigging on the masts it is

necessary to rearrange the gird-lines, as it is obviously inconvenient to hoist the eye of a shroud over the mast and allow it to fall down over both parts of a heavy rope which would require to be hauled up from the deck or rerove every time ; therefore they are lashed to the leads in the trestle-trees for the truss falls, and a small gird­line is lashed high up abaft the mast to be worked in the top for both sets of rigging. The starboard tackle-pend ant is put over first, then the port pair, next the starboard foremost pair of shrouds followed by the port pair, and so on alternately till all the shrouds are in place, ending with an odd one called a swifter on each side. Large ships have four pairs of shrouds and a swifter on each side. They are all sent up in a similar manner : the large gird-line from the trestle-tree is secured to the pendant at the extremity and to the shrouds more than the length of the mast-head below the seizing by means of a strop with a slip-rope, toggle, and down-haul ; the eye is opened to the shape of the mast-head and the after-port is stopped to the gird-line, which sways it up to the lubber’s hole, when the men in the top bend the eye in the direction it is to go over the mast and make fast their small gird-line a fathom or two below the seizing, with a stop on the after part of the eye, which is cut when the pendant or shroud is fair for going over the mast­head. When the shroud is over, each eye is hardened down by a large mallet called a “ commander.” Ropes should be rove through the thimbles of the pendants and hauled taut when they are being driven down ; then the “up-and-down” tackles should be hooked to the short legs (which are forward), while the long legs are being lashed abaft the mast and the runner-blocks lashed to them for staying the mast by the runners. As each pair of shrouds are put over, they should be temporarily set up by the dead-eyes and lan­yards, or by a luff-tackle on each, to prevent their springing up before another pair presses upon them. It is of very great import­ance to keep each eye taut before others press on it both for pre­servation and appearance ; many an eye has been stripped of its service and parcelling through slipping out from under the weight. A piece of rounding made fast to a bolt in the hounds of the mast with an eye in the other end is very useful for keeping the back of the eye down while it is being made taut, by reeving the short eye end up through the eye of the shroud and hooking a burton from the deck to it, which is pulled upon at the same time that the shroud is set up on the other side of the ship ; when finished, that piece of rope will be jammed. The lower stays, after they have been completely fitted and the hearts have been turned in, are stopped together one over the other at the fork of the collar, at the sides, and at the eyes. The gird-lines, having been put back to the mast-head, are sent down through the lubber’s hole, one crossing the fore side of the mast, and are bent to both stays below the fork of collars and stopped to the eyes ; they are thus swayed up near their places, the respective eyes being lashed together by rose - lashings low down over the eyes of all the shrouds. The hearts are then carried forward, the fore to the hearts in collars round the bowsprit and the main to hearts provided for the purpose near the fore-partners, while the collars of the stays are suspended from the fore-part of the top, the collars being eased down as re­quired to preserve a straight line between the lashing-eyes and the point where the stay is set up.

The following is the method employed to set up the rigging on the masts. It is first drawn forward by the runners and tackles (lashed to the long legs of mast-head pendants, which are lashed together abaft the mast) till brought before the position it is intended to stand in, as the strain of the shrouds will draw it aft. Many seamen recommend, with reason, that a strain should be brought on the after-swifters while it is being stayed, to keep it more firm. The propriety of wedging the mast before the rigging is set up may be considered an open question ; it was considered lubberly forty years ago, but is now the common practice. The lanyards of the stays are in proportion smaller than those of the shrouds, since many more turns can be passed through hearts than through dead-eyes. The standing parts are made fast round the collar or strop of the lower heart by a running eye ; the end is rove up through the heart in the stay and down through the lower one twice and the slack hauled through by the sail-tackle, which must be previously secured for that purpose round the lower mast-head and hung over the fore-part of the top ; or the two top- burtons may be used, one for each stay. When the slack of the lanyard is through and racked, the double block of a luff-tackle is attached by turning the bight back over a toggle or glut, as slings are represented in fig. 18. Then a selvagee strop is passed twice round both parts below the bight *s* (when the figure is turned up), brought up on the side of the arrow, and hooked to the luff. A cat’s-paw, as shown in fig. 7, may be used with a glut placed at *g to* keep the parts open, otherwise a large rope would be injured. The single block of the luff is secured to the stay as high up as it will reach by a long double - tailed selvagee, which is dogged softly at first, but terminates with close-taut turns and a spun- yarn seizing. Care must be taken to prevent kinking the rope, especially if it is wire ; if hemp, it should be parcelled to pro­tect the outer yarns. The fall of the luff is connected with the