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A New Rig for Steamships.

THE accompanying engraving represents a full powered steamer of about 2000 tons register, and 2500 gross, with two engines of 150 horsepower each, nominal; her average speed in calm, light, and adverse winds, under steam alone, would be about nine knots per hour on a consumption of fifteen tons of coal per twenty four hours.

Many practical men think that the day is gone by for jibbooms, flying-jibbooms, martingales, jib guys, foot ropes, back ropes, topmasts, crosstrees, caps, fids, outriggers, catharpins, &c., as well as for topgallant masts, royal-masts, studdingsails, gaffs, spanker and other booms, topgallant and royal yards, and the large number of shrouds, stays, back-stays, preventive-stays, braces, lifts, &c., the whole of which gear, by its resistance, uses enormous quantities of fuel when a vessel is going head to wind under steam.

It will be seen that the vessel here represented has only four sails, viz., a jib, foresail, mainsail, and mizen sail, and that they all set from the deck. The bow sprit, being short, is easily secured, and is of sufficient strength to stand a very heavy shock, should the vessel come into contact with anything. The three masts, which are built in with the ship, are of steel and of great strength. Further, they are secured with one stay and two backstays each. The latter are made of steel wire and will stand a great strain. On each mast there are only two yards, viz., a lower and upper yard. The former is secured to the mast, and is just above the rail.

It works on a sort of semi-circle, and is braced about by means of braces leading both forward and aft. These lower yards have a slit in them from yard arm to yard arm, and inside the yards there is a roller, on which the sail rolls down. It can be set, inch by inch, or by a foot or a fathom, as it is wanted. The upper yards are also of steel. They are secured to the mast by an iron parrel or traveller, and, like the lower yards, have braces leading both forward and aft, and lifts to steady them. The sails are made in the ordinary manner, excepting that the boltrope is of wire, served over so as to prevent it cutting the canvas. The upper yard is, of course, shorter than the lower, and the difference in the spread of the sail at the head and the foot is only sufficient to let each twine of the leach rope, while rolling up, lay inside each other, so as not to overlap, means being provided for preventing the rope from cutting the sail.

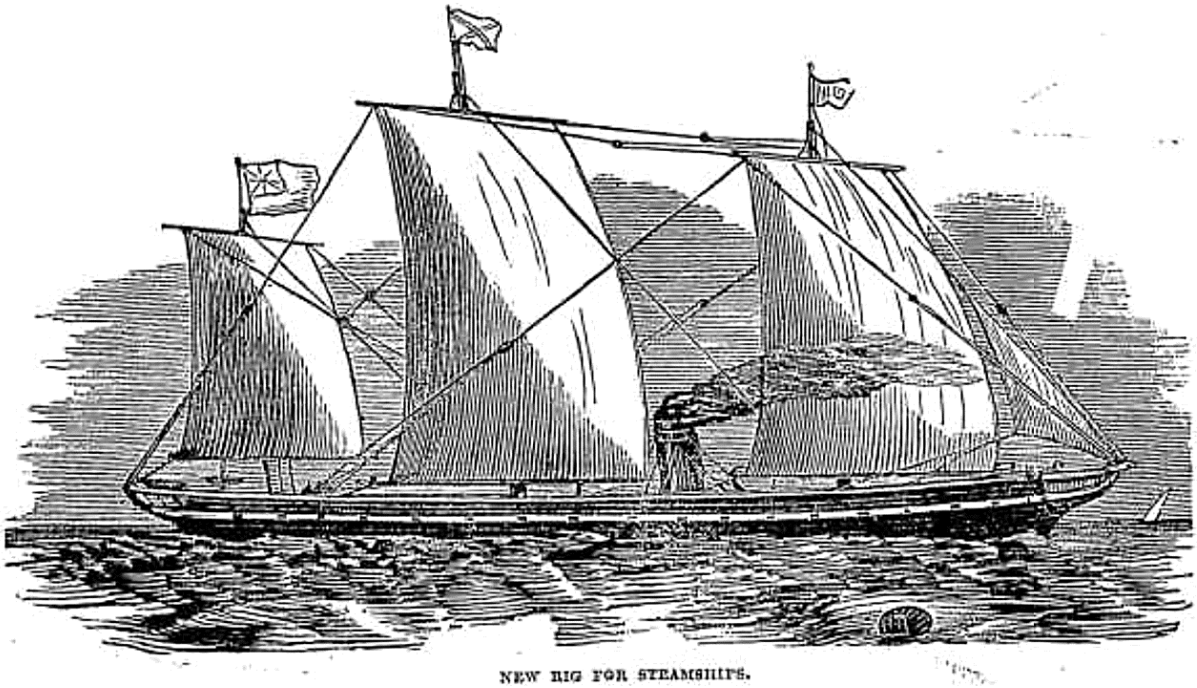
There is no slit in or bonnet on the sail, as the roller inside the lower yard is secured at either end only ; but to prevent it from buckling or bending, there are other numerous little wooden rollers, both at the fore and after part of the main roller, which travel round as the sail rolls up or down, while to prevent the sail chafing there are several bands run across it to take the small rollers. Proper means are provided to prevent the leach rope cutting the sail when rolled over it. When on a wind bowline bridles and bowlines might be used. The upper yard is hoisted by means of halyards, which are rove through cheek blocks, one on each side of the masthead, and through a block on the yard, and the sail may be set at either end of the halyards, as they both have purchases on them, one leading down on each side of the mast.

A steamer rigged after this fashion might carry with her the same sail-propelling power as an ordinary sailing ship, with only pole-masts exposed to adverse winds. It is known that two-thirds the number of yards of canvas now used in large vessels, propelled by sail only, would have the same power on the vessels if made into three or four sails instead of 20 or 30 ; and there does not seem to be any reason why vessels propelled by sail alone should not be rigged as here shown.

The benefit to be derived from rigging a steamer full power sails and full-power engines, without having to drag an enormous amount of masts, yards, rigging and gear, through adverse winds, for example, on a voyage from London to Australia, would be enormous. The mast would not need shrouds to steady it. When the sail was not sot, the stays would suffice for that in port. There are only two shrouds on each side of each mast, and there are two sheaves, one on each side of each masthead, through which the halyards are rove, the hauling parts leading down the most to a steam winch, or they may lead down the mast with the shrouds to the ship's aide.

It may be asked how the roller would work in take in such an immense sail, and what is to prevent the roller from buckling and jamming the sail up against the edge of the slit where it goes in and comes out of the yard? The answer to the first question is, the sail, by means of this roller can be taken in, notwithstanding its great dimensions, easier than by means of a roller on the topsail yard, even when the latter sail is only one-fifth the size, because the lower yard, which works only on the rail, is handier to get at, the machinery to work it is very substantial, and of great power. As to the second question, the roller would buckle and jam up against the edge of the slit were it not for the small rollers which run from yardarm to yardarm, so as to take the seam of every cloth of canvas; or, in fact, to every seam in the sail there is a roller both on the fore and after port of the sail.

It may also be objected that, as the sail rolls down, and as the leach rope rides over the canvas, the great strain on the leach rope nipping the canvas might cut it; but this has been provided for. Whatever objection may be raised to this new rig, it will be admitted that the time has arrived when a change in the rig of steamers is necessary, in order that they may carry full-power steam, and be able as well to spread the necessary number of yards of canvas to a fair wind, without carrying the very objectionable amount of top-hamper used at present.—Mitchell's. Maritime Register.



NEW RIG FOR STEAMSHIPS.