wires 0.134 inches diameter running over a six foot sheave, gives us a stress of 55,000 lbs. per square inch in the metal.

However, we are for practical reasons obliged to use sheaves of comparatively small diameter and so must make the best of it. Too much care, however, cannot be taken to so design running rigging that the same portion of a wire rope will pass over as few sheaves as possible, because the bending not only induces the undesirable stress above referred to but produces fatigue of the metal by repetition.

The correct size of wire to use for a certain purpose is often determined by trial. An instance of this may be given as follows: The floating derricks were originally equipped with 1¼" swinging wires running over 15½" sheaves to a turntable of 9' 6" diameter. These ropes have been replaced by others of 1" diameter and results show a marked increase in the life of the rope.

Referring to the matter of spud wires, the writer suggests that the rope be not confined to two parts of large diameter over one sheave, but that the load be carried by four or more parts running over several sheaves. By using such an arrangement, the size of the rope could be greatly decreased and be more suitable to the sheaves, which would, of course, be of the maximum diameter permitted by the dimensions of the spud. There are mechanical difficulties to be reckoned with, but they are not insurmountable. Apart from the wire rope point of view a desirable feature of this arrangement would be the lowering of the pull on the hauling part of the cable when pinning up. Spud drums could be less massive than at present, though perhaps not much smaller on account of the increased length of wire to be accomodated. All running rigging should be properly lubricated with black oil or some substances suitable for the purpose. Wire rope manufacturers recommend a mixture composed of linseed oil and lamp black or Spanish brown.

When sockets are to be babbitted to the end of a wire cable, the material of the rope should be sufficiently soft to allow of bending the wires to a small radius without cracking. A socket splice is never too strong for the work it is called upon to do, and the swell on the rope end should be large enough to prevent any possibility of pulling through even if the babbitt was not present. If many wires break in bending over, we lose to a more or less extent this highly desirable feature. Of course, the babbitt cements the whole bulb together and adds materially to the strength of the splice. Possibly exception may be taken to the statement that the cable should have a swelled end, and perhaps not without reason for some wire rope manufacturers advise against the practice. The observations of the writer, however, are to the effect that a heavily loaded