### STEERING THE ALASKA.

In the SCIENTIFIC AMERICAN of March 7th last, we gave engravings of the steamer Alaska, showing the late mishap to her rudder. It will be remembered the accident consisted in the breaking in two of the rudder at the upper part, leaving the lower part intact, and available for use provided any means could have been devised to work the same. The propeller and machinery of the ship—11,000 H.P.—remained in good order, but for want of means to steer, the great ship was in danger of being lost with all on board, her officers and crew being unable to improvise anything by which steering could be effected, although they resorted to spar drags and the ordinary contrivances. At last they met another steamer, which by agreement was taken in tow and used as a steering drag behind the Alaska, which then steamed ahead, and in this manner, using the towed steamer as a rudder, port was duly made. For the privilege of using this steamer as a drag for four or five days, it is reported the Alaska company will have to pay two hundred thousand dollars.

We asked of our readers whether any of them could suggest any other available plan whereby the Alaska might probably have been steered; and in response we have received a number of replies, some of which we now present, and in following numbers shall doubtless give others. The problem is well worth discussing. Those who wish to take part in it should examine the engravings of the Alaska and particulars we gave March 7. The safety of ships at sea is one of the most important of subjects, and whoever can offer anything useful in this direction may be regarded as a benefactor.

Among the replies so far received have been quite a number in which new devices for steering have been proposed, involving new machinery or appliances not applicable to the emergency in which the Alaska was placed. With regret we shall have to omit most of these contributions as not pertinent to the present question.

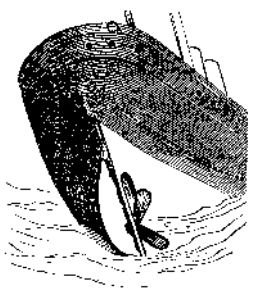
But it is proper to observe that the present devices for steering great ships are deficient, and there is need for new and useful inventions in this line. The same remarks apply to all kinds of life-saving appliances, to the construction of vessels to prevent them from sinking, and to all departments of marine construction and manipulation.

With respect to some of the plans below presented, the question will naturally arise whether the authors have fully considered the difficulty of getting at the rudder in order to attach their devices. It would seem to be no ordinary task to attach clamps or pass in ropes upon a flapping twelve ton rudder, under an overhanging stern, rising and falling amid crashing waves.

### The Alaska's Rudder.

*To the Editor of the Scientific American:*

The problem of the steamship Alaska's rudder is a study. It seems to me, if the officers of the vessel had carried the anchor cables to the stern of the vessel, as indicated by the dotted lines in the sketch, then formed a loop of another cable, say about one-third the length of the lower part of the rudder, and attached the anchor cables one on either side, and if necessary attached an anchor to keep the chains from masting or swinging too easily in the waves, now we are ready to grapple with the dangerous rudder. Lower the loop from the stern of the vessel to the center of the broken piece, and as you draw forward by the anchor cables the loop will naturally open and draw over the outer surface of the rudder; and when the cables get tight, one on either side of the vessel, the rudder will be firmly bound and perfectly secure, after which the vessel would be easy to handle by the use of the sails and other appliances at hand. Of course the power to draw the cables would be the same as to lift the anchor. CHAS. H. OTIS

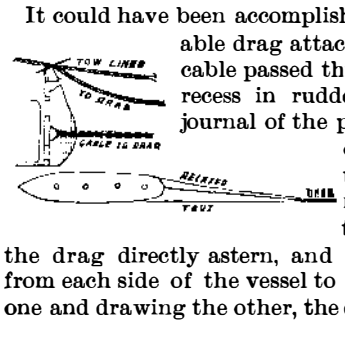


Shelton, Conn.

*To the Editor of the Scientific American:*

In the last number of the SCIENTIFIC AMERICAN, in an article entitled "The Alaska's Rudder," the question is asked: "Could anything have been done with the appliances at her officers' command to bring the broken rudder under control?"

It could have been accomplished, I think, by a suitable drag attached to the rudder by a cable passed through the semicircular recess in rudder over the end of the journal of the propeller, the end of the cable being fastened between the drag and the rudder. The speed of the vessel would throw the drag directly astern, and by running a towline from each side of the vessel to the drag, and relaxing one and drawing the other, the drag would be deflected and the rudder turned toward the taut hawser, bringing it under very fair control. With a cable of proper length there would be but little danger, even with the most violent action of the sea on vessel and drag, of throwing the broken rudder above the length of its pintles, and so detach it. With care the fractured end of the rudder post might have been kept over that of the rudder, at least a part of the time; and even if not, its weight of nine or ten tons and little buoyancy would keep the rudder on its bearings.



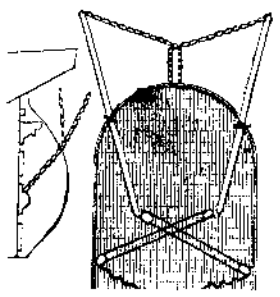

By this arrangement I can see no reason why the steamer could not have been quickly put upon her course, and run to port with comparative ease and little danger. A. E. F.

Cleveland, Ohio, March 9, 1885.

### The Alaska's Broken Rudder.

*To the Editor of the Scientific American:*

Reply to the problem, "How would you have gone about to solve it?" An attempt ought to have been made to run a chain cable through under one of the hinges, second one below the break if possible; then crossed and running up to two spars rigged over the stern and secured, blocks made fast to the forward end of spars, would have made a steering gear of sufficient strength and one easily handled, by which she could have been brought into port. The chains could have been lashed together at the place of crossing. L. K. F.

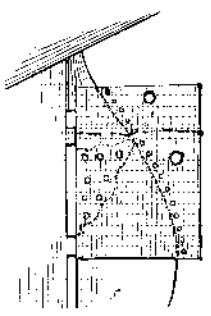


Brattleboro, Vt.

### Temporary Repair of the Alaska's Rudder.

*To the Editor of the Scientific American:*

Western steamers generally carry extra pieces or sheets of boiler iron, blacksmith's forge, with facilities for making bolts, drilling holes, and so on. I suggest to take two plates of iron, of whatever size could be found, and put wood between the thickness of after edge of rudder. If wood the right thickness could not be found, boards could be put together to get the right thickness. Bolt the iron on each side of the wood with bolts of sufficient strength and numbers; let iron extend over the wood on the rudder as far as the pintles would allow it to go, so as not to hinder the rudder turning either way; drill holes through the plates so as to come over the fracture, for that is all the place bolts could be got through the rudder blade. This could be lowered over the stern of the vessel with ropes from each side, so as to guide it to the place with two other ropes fastened lower down to pull it forward into place. After it was started on the rudder blade, the bolts might be left a little slack until the plates were put in place, so as to avoid any trouble getting the clamp started. Of course a favorable time would have to be selected to do this work when the sea was a little calm.



Inclosed find a drawing to exemplify above.

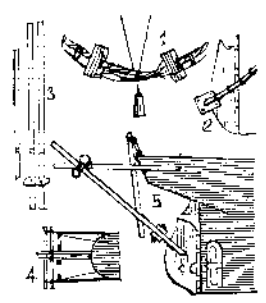
G. W. COFFIN.

Pittsburg, Pa., March 7, 1885.

### Catching the Loose Rudder.

*To the Editor of the Scientific American:*

I noticed your invitation for suggestions as to way of catching the loose rudder of the Alaska. I have made a pencil sketch of plan I would try. I should take a hawser, and rig it like Fig. 1, which shows a hawser with two blocks upon it. These blocks I would make of plank, and two or three pieces, and cross the grain when I put them together, and they would have to be put together upon the hawser, and left so they would just slide freely. Then I would have four leaders screwed on so that I could use a good strong line to move the blocks, and would slush everything well that I expected to move. When all ready, I would have hawsers dropped over stern with blocks pretty far apart, so as to take in whole width of rudder, and would probably use the deep sea lead or some other weight to carry the bight of my hawsers down; would watch chance, and take advantage of movements of ship, and catch rudder between the blocks, as shown in Fig. 2. I might not catch on the first time, but feel sure that I would be successful in a short time. With rudder caught, I should consider it plain sailing. I would take my spare spars, and with two of them make a pair of tongues, Fig. 3, and with others rig out like Fig. 4, and set up like Fig. 5, and with the proper ropes, block tackles, etc., any *sailor* will make her work. The tongues work a tiller, and while the movement of the rudder would be less than its usual limit, yet it would be sufficient to steer. I came out of the Arctic Ocean through Behring Straits once with our rudder so loaded with ice that we could only get a *quarter movement*, and yet we made a dangerous passage without any trouble. JOHN A. PAUL.

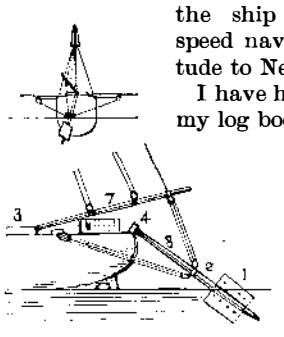



Huntingdon, Pa., March 8, 1885.

### The Denmark's Rudder.

*To the Editor of the Scientific American:*

Having crossed the North Atlantic 38 times in the last thirteen years, I took great interest in your article on the Alaska's broken rudder. In reply to your inquiry, "Ingenious reader, what would you do?" I inclose cut of an improved rudder made by the captain of the national steamer Denmark, in March, 1878, with which the ship was safely and at a fair speed navigated from 45° west longitude to New York.




I have had a sketch of the device in my log book ever since, and have had the pleasure of seeing it copied by the captains of some of the best transatlantic steamers.

The following is a description of the contrivance:

1. Iron doors bolted on the end of the fore boom, the boom being swiveled, fastened, just above deck at 4.

3. Main saloon skylight cut, allowing the main boom 7 to pass in, and end lashed to deck beam.

5. Upper topsail yard, across deck, lashed between the after bits. Falls from both ends of the topsail yard lead to the fore boom at 9, serving on board over two blocks amidships and then on to the after winch. Taking opposite turns at the port and starboard ends of the winch, it was only necessary to run the winch ahead for a port helm and backward for starboard.

In severe weather the whole affair was cocked in the air by the top lift, and the vessel hove to.

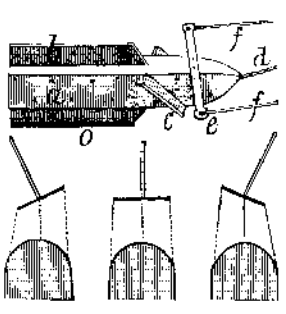
ROLAND R. DENNIS.

Poughkeepsie, March 10, 1885.

### Steering the Alaska.

*To the Editor of the Scientific American:*

I have a device to offer, which, with the appliances at command of the officers of the Alaska, could have been constructed in a few hours, and which would have answered the purposes of the broken rudder. Let *a a* represent a stick of timber or a number of planks, nailed or bolted together to make a log, say twenty feet long, twelve inches thick, and eighteen inches wide; and if in making this log, instead of letting all the planks run lengthwise, we cross cut enough of them, say forty-two inches long, and place them diagonal across in the center of the log that we want to form, we will design two blades, *b b*, which will project twelve inches from the upper and lower side of the constructed log, so that they will answer for two centerboards, as it were. Now weight the lower blade at *o* with a few old grate bars or other heavy material, then saw a slit three inches deep on each side of the log, so that we can insert the inclined blades, *c*, therein; these blades ought to be set on an incline of thirty degrees, and they ought to project 18 inches. Brace them on the underside, then strap or bolt on the iron or stout timber rod, *e*, on the ends of which insert a lash on the guy ropes, *f*; also fasten the rope or chain, *d*, to the forward end of the log, *a*, this end of the same having its sides tapered or wedge shape. I would suggest that the edges of all the blades be sharpened. If convenient, the device can be constructed out of a solid piece of timber, and by means of angle irons can be firmly put together, or by the aid of the life rafts that are aboard all ships, a device of this kind can be constructed. Now suppose the vessel is stopped and the apparatus is lowered overboard, and on striking the water the weighted blade, *o*, *b*, turns by gravity downward, and the upper one, being the lightest, keeps the device in that position; now fasten the rope or chain, *d*, in the center of the stern of the vessel, and after having connected the guy lines, *f f*, with tackle, one on the starboard and the other on the port side of the vessel, and after having allowed about fifty feet between the vessel and the device, the ship is started, and instead of the apparatus floating, as it has done, it will become immersed, and remain in that condition as long as the vessel is in motion; and if we now deflect the guy ropes by means of the tackle, we can proceed on our intended course.

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