Letter 36 -- No Title
N. C. HARTINGH. BAY CITY, Mich., Jan. 23.
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A CANVAS CANOE.

Editor Forest and Stream:

Some time ago I saw in the columns of your entertaining paper an inquiry relative to canvas canoes. Having built one several years since and used it continually from the time it was finished until the present, the following may benefit the inquirer and others:

If I remember rightly I gleaned my information as to model and details of building from an article written by Mr. Stephens in the *Scientific American*; at least it was in the winter of 1880-81 that the boat was built, and launched about May 1, 18-1. The size of the boat was 12½ft.x36in., 12in. deep amidships and 18in. at stem and stern, and it was built as follows: The keel was a piece of white oak 1in. square by 11ft. long, fastened by screws to the stem and stern pieces of hackmatack, cut so as to be 1in. thick where they were fastened to the keel, and shaved to less than a quarter of an inch where they cut the water and above, and curved so as to make just 12ft. length of boat over all. A single mould 36in. long, 12in. deep, set crosswise in the center of the keel and fastened securely, served to give the proper sheer plan and shape, to which was tacked the middle of two strips of white oak, 1x½in., the ends of the latter being then bent around to the stem and stern pieces, which had, of course, also been securely braced after being screwed in place and made plumb. Of these thin oak strips I had provided a dozen, six for each side, and they were fastened to the ends by small brass screws below the waterline, and iron above. After the first two were on, however, running from the top of the mould in the center to the top of stem and stern, and making a beautiful sheer, I placed in the ribs.

These were made from some rock elm, two pieces of which I bought from a wagon maker for fifty cents, they being, when I bought them, 6ft. long, ¾in. thick and 3in. wide. With a rip saw I cut them into nine or ten pieces, each ¾in. wide, ¼in. thick and 6ft. long. I then marked out on a large sheet of white blotting paper, about 2ft. square, used on office desks, the shape of what I considered the rib should be, beginning at the center ribs and making the ribs aft and forward of the mould in the center alike. After they were marked out on the paper I cut them out with a pair of shears, laid them on a wide board, drew the plan of them on that, and then drove nails 3in. apart down the line on the board, one on each side, from the top to bottom of the rib plan. Then having steamed the elm strips in a wooden box or trough 4in. square and 6ft. long, made for the purpose, into which I inserted the spout of a common tea kettle through a hole bored in the center of the bottom, when resting on the backs of two chairs I bent the elm nicely around between the projecting nails along the line or plan of the rib drawn on the board, making a pair of each, each rib reaching from gunwale to gunwale, all in one piece.

I then mortised holes through the keel from one side to the other ¼ by ¾in. wide, just large enough to allow the rib to go through, tight fit, and 6in. apart. Through these holes I inserted the ribs, each in its place, fastening the same in the center, through the keel with a brass screw ⅞in. long, and at the sides to the gunwale by an iron screw ½in. long, ribs outside of gunwale. I now ran another oak strip from stem to stern, outside of ribs, fastening that to inside wale by copper wire running through each and around the end of each rib, so as to bind all together firmly. One foot from each end I put in a pine bulkhead, made of ½in. stuff, flush with the ribs. Having fastened everything securely I now took the frames from off the stocks, leaving the mould in frame, however, in the center, and turned it over, bracing it in the center and at the ends, and put on the balance of my oak strips, spacing them about 4in. apart, running from stem to stern and each screwed to the ribs where they crossed each other.

The directions then said to stretch on the canvas, to paint and the boat is finished; but preferring strength to lightness I procured from the planing mill some light stuff they had stored away composed of butternut, pine and some walnut, not over ½in. thick; this I fastened to the bottom in strips of about 4in. wide, narrowed at ends so as to fill the spaces between the oak strips, and in such a way as to make a smooth bottom. Not water-tight, of course, but smooth enough to act as a foundation for the canvas, and extending about 3in. above waterline. This I then painted with thick white lead, then took my canvas, two widths sewed with double seam up the center, 12ft. long, being then wide enough to reach round the bottom from gunwale to gunwale, tacked the seam down the keel, drew the sides down to the gunwales (she was upside down), fastened them lightly, then drew them out at stem and stern very tight, fastened it there, turned her over, drew up and fastened canvas over gunwales, and in such a way that I got the most perfect hollow waterlines you ever saw, using small copper tacks; put bottom boards inside, decks from stem and stern to bulkheads, rowlocks, etc., two coats of white lead outside, and she was done. Total cost $4.35.

I have used the boat every week of every month during the summer time since, and for two years every day almost without exception during the summer months, and that, too, the very roughest kind of usage, around the city docks, up and down from dock to water and over logs and rafts until I thought at times she was surely a goner, but to-day she is just as good as the day she was launched, with the exception of a few scars in the canvas where I have tacked and painted over slits made by sharp sticks and nails. She draws only 2in., light, has, of course, a very flat floor, sails well only before the wind, runs like a zephyr with oars and works beautifully with double paddle; but, more than all, will hold a man upright without dumping him over one side when he happens to look over the other side. I have again and again taken four, five and six persons down the river to Saginaw Bay in her and then had 6 and 7in. of freeboard; and although we could not travel around her deck much, she was as steady as a church, weighs but 60lbs., and the older she gets the tighter she becomes. I have been induced by Mr. Bousfield, of this city, who so beautifully carried away the first honors last year at the A. C. A. meet for the highest average record of points in racing, to buy a canoe, and have now building a smoothskin 15ft.x31½in. canoe by a local builder, but in spite of the fact that I promise myself a good time in her, and lots of sport and excitement at the meets, which I shall try and attend, I am inclined to believe that when I want a good time and desire to take a chum or two for a sail or fishing excursion, without fear of capsizing, and wish to take comfort, that I shall have to leave the new boat at home and fall back on my old canvas-back.

I must say that I heartily agree with Mr. Clapham in this matter, and believe that instead of ballast and racing machines, a wider, safer, more comfortable boat is far to be preferred.

BAY CITY, Mich., Jan. 23. N. C. HARTINGH.