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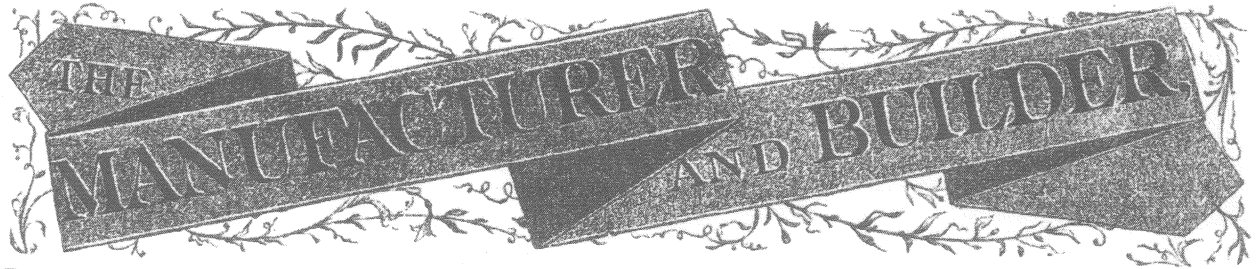
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SIXTH YEAR.

### A Portable Folding Boat.

The objection to boats in general is the room they occupy when not in use, and their weight. An ordinary small boat is not only a wagon-load, but is so bulky as to be one of the most cumbersome objects which is ever transported over wheels. Even on ship-board, where there appears room enough for almost anything, a number of boats take up a large space, and are often very much in the way. It is not strange that a great deal of ingenuity has been exercised to make boats not only light, but so constructed that they could be folded up so as to occupy little space. The first attempts of this kind have been made for Arctic travellers, and were partially successful. However, the climax of ingenuity appears to us to have been reached by Mr. Hegeman in his patent portable folding boat, of which we give a representation on this page, Fig. 1 showing the boat as folded up for transportation, and Fig. 2 as unfolded for use in the water. The greatest strength of material is so judiciously combined with the least possible weight that it can be carried in a light wagon, or on horse-back, or even by a single person, a feature which enables any tourist or sportsman to travel with the greatest facility on the most distant streams and lakes.

Persons living at a distance from the water can not keep an ordinary boat without going to the expense of a boat-house, or keeper to take charge of their boat; but if they have a boat of this kind, they can easily take it home and be sure to have it on hand when they want to use it, while tourists, trappers, sportsmen, and exploring expeditions can not at the present day be said to be completely organized without having such a boat.

But a still more important use, is perhaps that for

The seats and oar-locks are adjustable, while the covering consists of stout cotton-duck canvas, proved by experience to be sufficiently water-proof without paint or other preparation; it is also strong and very durable. It is evident that such a boat can stand to be knocked about in a manner which would ruin any ordinary boat, while repairs can be easily made by any one. While other boats may be stolen, turned adrift by mischievous persons, or slowly decay by water, these can be stowed away in a safe place in the attic or other convenient locality.

As the boats are flat-bottomed, covering a large

they can be folded up flat so quickly for transportation, while the Secretary of War calls them indispensable for the success of the army, saying that no wooden boats could possibly have resisted the rough usage bestowed upon them, while the American Institute judges were satisfied that if the late ill-fated steamers had had such boats, no lives would have been lost.

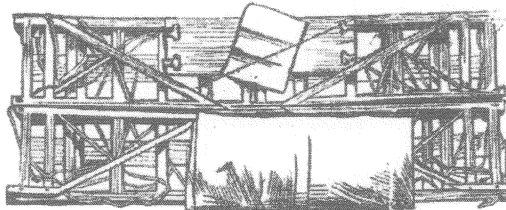


FIG. 1.—FOLDED FOR TRANSPORTATION.

surface in the water, and light, they have a surprising light draft, a boat carrying three persons drawing scarcely one inch; they are therefore adapted to navigate the shallowest marshes as well as the deepest waters. This buoyancy is increased still more by means of cork fenders placed underneath the gunwale, and acting as life-preservers; this renders the boat still less liable to sink or capsize.

The manufacturer, Mr. John Hegeman, of Ballston Spa, Saratoga Co., N. Y., is prepared to send such a boat by express C. O. D., neatly packed, to any person ordering it and sending ten per cent. of the price. The freight is low, as the bulk of the boat when packed up,

### Seasoning and Preserving Timber.

There are different ways of seasoning timber; the most simple is to dry it in the air under a shed, the next to immerse it in water for a season, salt water by preference, which dissolves some of the sap, which otherwise may promote decay; the next is to put it into a warm place, artificially heated, for instance by steam pipes; this produces a kiln drying. A still better way is to place it in a steam chamber, where steam under high pressure is introduced; this penetrates into the fibers and prepares the wood for a more equal shrinkage when dried afterward; it is a kind of cooking process which coagulates the albumen, and thus augments the solid matter in the wood, preventing lumber thus treated from swelling afterward by dampness, and to shrink by dryness only half as much as other lumber.

The exposure to steam-pressure is no doubt among the simplest of the thorough methods. Experience has shown that an exposure of timber during two or three weeks to high pressure steam will thoroughly season inch lumber, however green or wet it may be. Such seasoning acts to some extent as a preservative; however there are more thorough methods of preserving wood, which we have described on page 169, based on the joint action of tannin and iron. We are able to corroborate this principle, having before us a sample

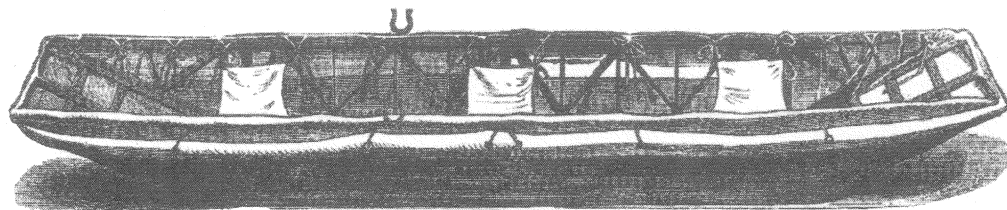


Fig. 2.—HEGEMAN'S PORTABLE FOLDING BOAT, UNFOLDED FOR USE.

military expeditions. The first boat of this kind was used by a member of the Engineer Corps of Gen. Sherman's army, and found to be especially adapted for military purposes, owing to its great strength and capacity with lightness combined. The boat here described is an improvement on those used in Gen. Sherman's army, where large sizes of them served for pontoon bridges, while the sledge journey across the ice toward the north pole during the expedition of the late Capt. Hall with the *Polaris*, was accomplished with the help of such a boat.

The required stiffness is obtained by a frame made as light as possible, and therefore of carefully selected tough timber, hickory, ash, etc. The connections are made of gun-metal, so as to be secure against rust

is quite small. The sizes vary from 9 feet in length, weighing 35 pounds, carrying one person with his traps, and costing \$75, to 18 feet in length, weighing 100 pounds, carrying 7 persons and traps, and costing \$117, while there are three intermediate sizes—in all five. Other larger sizes for special purposes, expeditions, etc., can be built to order at reasonable prices.

Tourists who have used these boats in the Adirondacks and in Florida, are unanimous in their praise, while the American Institute, as a result of experimental test, gave to the inventor a medal and diploma of special award.

We have no room for the different letters and testimonials which we have before us, and will only mention that Gen. Thomas praises the convenience with which

of less antiquity, but sufficiently old. It is a piece of white oak dowel which was for some 30 or 40 years in the pine flooring of Tiber Creek arch, Washington, D. C., and was sent us last year by the kindness of Mr. N. J. M. Van der Weyde, C. E., at that time superintendent of public works there. It is black, perfectly sound, and as hard as ebony; it evidently owes its black color and hardness to the combined effect of the iron in the soil on which it was placed and the tannic acid in the wood itself. The cost of materials for this process is small, as tannic acid pure enough for this purpose can now be produced for about 10 cents a pound, and even much less in the future, as it can be made from bark, young branches, and leaves of many trees, which owe to that acid their astringent properties.