Dec. 24, 1929. P. R. ANDREWS 1,740,560

METAL OAR

Filed April 14, 1928

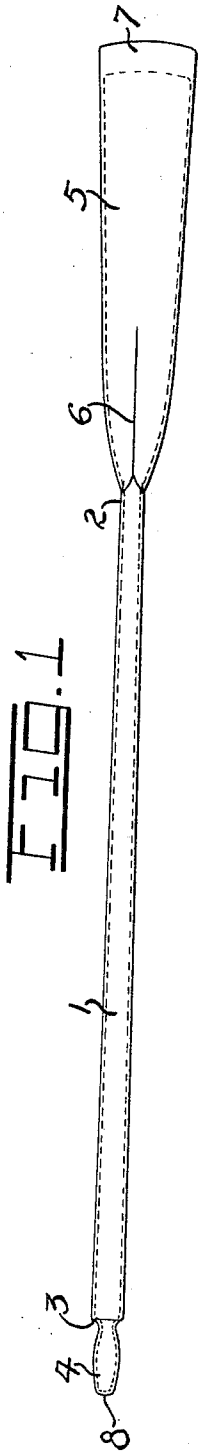


Fig. 1

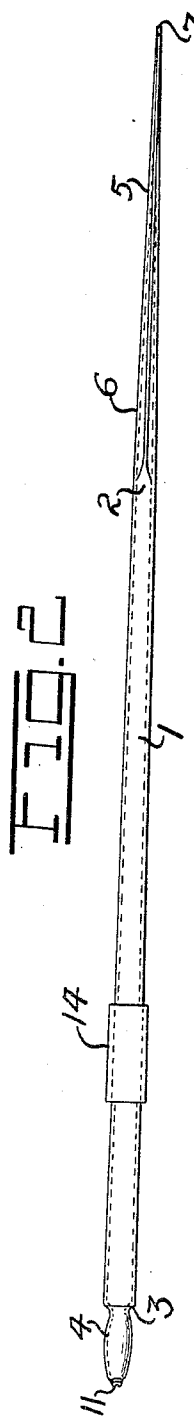


Fig. 2

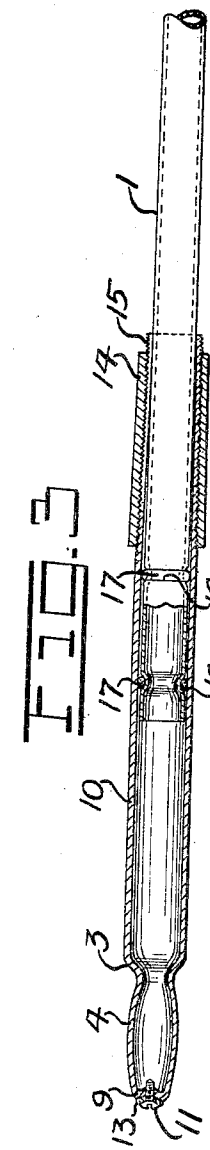


Fig. 3

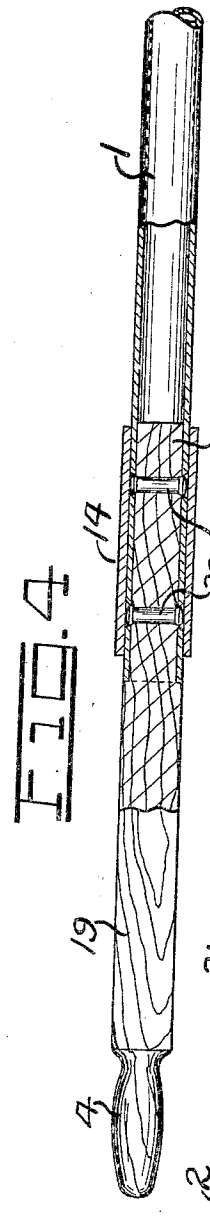


Fig. 4

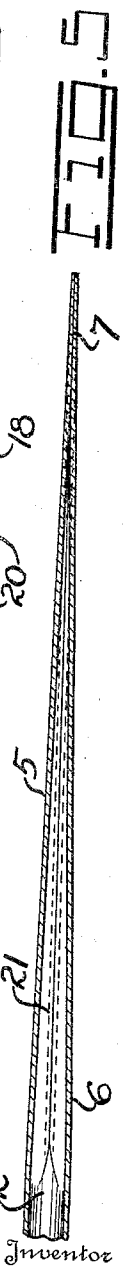


Fig. 5

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UNITED STATES PATENT OFFICE

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METAL OAR

Application filed April 14, 1928. Serial No. 270,060.

My invention relates to an improvement in oars, and has for its particular object the provision of an oar which is wholly or chiefly formed of metal tubing, drawn to shape, and which being of tubing, is light and buoyant.

A further object is the provision of an oar of metal tubing, which may be formed in two parts if desired, together with means for sealing the joints between the two parts to prevent leakage of water into the interior of the oar, yet permitting adjustment of the length thereof, as may be desired.

A further object is the provision, in an oar of metal tubing, or otherwise made hollow, of means for venting and draining such water as may leak into the interior of the oar.

A further object is the provision of a method of manufacturing oars from metal tubing with a minimum of labor and expense, yet shaped in all respects and handling in the same manner as the usual ash oar.

With these and other objects in view, as may be ascertained from a study of the specification and claims, my invention comprises the novel parts and the novel combination and arrangement thereof, as shown in the accompanying drawings, described in the specification and as particularly defined by the claims terminating the same.

In the accompanying drawings I have shown various illustrative forms of oar, embodying my invention.

Figure 1 is an elevation of such an oar formed entirely of one piece of metal tubing.

Figure 2 is an edge view of a like oar with certain additional improvements, or modifications.

Figure 3 is a partial secton and a partial elevation of the handle end of a two-piece metal oar.

Figure 4 is a similar view of the handle end of an oar partly of metal and partly of wood.

Figure 5 is a section through the blade end of my oar.

The usual commercial oar is made of ash, or like wood, and must be of straight, perfect grain. It must be sufficiently wide to form the blade and the grain must be uniform from the tip of the blade to the end of the handle. It is becoming difficult to find wood suitable for such oars, and their cost is rising to an extent which seriously embarrasses the trade. However, it is not difficult to find pieces suitable for the handle, and in one phase of my invention, I propose to form the handle of wood and the loom and blade of a single piece of metal tubing.

However, it is my desire to provide a method which can produce an oar made entirely of a single piece of metal tubing, so that such an oar will be complete in and of itself, and will have no part which may possibly become detached from the remainder of the oar, which will be strong, yet flexible, and which in appearance and in operation will be the equal, if not the superior, of the ordinary ash oar. It must, of course, be floatable, and for this reason must be closed at all points against the inlet of water. I prefer that no joints be employed in any part of the oar which is customarily submerged or frequently, as this offers a foothold for rusting, corrosion, and electrolytic action, and for working loose of joints which may have been perfect originally, all contributing to leakage. Added to this, the presence of joints at such places always carries the danger of imperfect or careless workmanship, with consequent early leakage. To avoid all such undesirable possibilities, I prefer to form the blade and loom portions of one piece of metal, integral, so that these possibilities are completely eliminated. Nevertheless, occasionally, water may leak through imperfect joints at the tip, and I provide a means whereby such water may be drained out and the interior of the oar kept free from water.

It is well understood that a metal tube, as, for example, one of steel, may readily be drawn, spread and shaped when heated. It is well within the province of the art to form rolls and dies which will satisfactorily shape from such a tube an oar of the shape commonly employed in commercial pursuits. I, therefore, propose that a steel tube of the proper length be heated and drawn and spread by suitably designed rolls to form a loom 1, suitably tapering from the neck 2 to the shoulder 3, whereby it is given the requi-

site flexibility, at which point the handle 4 is formed. Formed integral with the loom is the blade 4 and this blade may be built up from the neck outward, as indicated at 6, to reinforce the blade at this point. The spread ends of the tube, forming the tip of the blade 5, will, when thus highly heated, be in effect brazed together, as indicated at 7. Thus this end of the tube is closed, and the remaining end, forming the tip 8 of the handle 4, may likewise be closed by brazing or otherwise.

As has been noted there may occasionally be oars in which the joints at 7 and 8 are not perfectly tight, and to prevent any possibility of the interior of the oar filling with water, I may provide a vent, as best seen in Figure 3, located preferably at the point farthest removed from the trip of the blade which gives access to the interior, as at the tip of the handle 4, and indicated by the numeral 9. This vent would ordinarily be closed by some such means as a tightly fitting set screw 11, seating upon a leather or like compressible washer 13. Also because the tubing from which the oar is drawn may be relatively thin, it may be found desirable to provide a wearing surface to fit in the thole pins to prevent wear upon the loom 1 itself. Such a device is indicated at 14 in Figure 2, and may consist of a brass sleeve sweated into place, or otherwise secured.

There may be occasions where it will be found desirable to permit shortening or lengthening of the oar, and this may be accomplished without departing from the spirit of my invention and without providing an oar in which there is a joint in that portion ordinarily submerged in the water. Thus, in Figure 3, the outer end of the loom 1 is left open, and a sleeve 10 carrying the handle 4 is fitted closely thereon. The end of this sleeve 10 may be slit as indicated at 15, or otherwise made compressible, and this end of the sleeve would be tapered slightly, and be threaded; in order to grip this end of the sleeve 10 upon the end of the loom 1 and to prevent leakage of water therebetween, should this part of the oar fall into the water, the wear sleeve 14 may be tapered to correspond to the taper of the end of the sleeve 10, and be threaded to fit thereon. This sleeve 14, then, will grip the split end of the sleeve 10 tightly upon the loom 1 to prevent leakage, and as a further precaution channels 16 may be rolled in the end of the loom and packing rings 17 placed therein. Thus the sleeve 10 and loom 1 may slide one upon the other when the wear sleeve 14 is threaded back, but will be held permanently in position when the sleeve 14 is threaded home. Moreover, the joint thus provided is at the gunwale of the boat at all times and within the thole pins, and is not ordinarily dipped into the water, hence there is little likelihood of leakage at this point, even though the portions of the oar which are customarily in the water may become rusted, or leak from other causes.

Some persons will prefer a wooden handle, hence it will be desirable to use short pieces of ash in some cases as the handles for the oars. Pieces of a length suitable to this purpose may be obtained readily, though their length may not be sufficient to form the entire oar, or the grain may be such that it will not be suitable for the loom and blade of the oar. My invention is well adapted to the formation of such combination oars of wood and metal, as has been illustrated in Figure 4. Thus, the end of the loom 1 is left open, and within this open end is fitted a reduced neck 18 of a wooden handle 19. To secure the two together various means may be provided, such as the rivets or bolts 20. To prevent rusting of these bolts, or rotting of the wood through which they pass, their ends may be protected by a wear-plate or sleeve 14, or in some like manner. In this construction, as in all of the others, the loom and blade are integral, and wherever a joint is found, it is in the portion of the oar which is not ordinarily within the water.

Moreover, the entire oar is buoyant, the blade itself has the hollow chamber 21, as may be seen in Figure 5 and the sides of this chamber are only brought together at the very tip 7, where they are brazed together. All bracing of the blade is external, as at 6, and there is no internal bracing, eliminating considerable expense due to the difficulty of inserting such bracing, and simplifying manufacture. The oar being hollow throughout, or having a buoyant handle, if it should fall into the water, will float and will lie on the surface of the water, rather than with the blade down and the handle up, as would oars with solid blades, or blades internally braced.

What I claim as my invention is:

1. A metal oar, and with its loom and blade integral, and hollow from end to end.

2. A tubular metal oar element, in which the blade is integral with the loom, and the loom is continuous to a point beyond that corresponding to the usual water level when the oar is in use.

3. An oar element as in claim 2, including a wear sleeve positioned on the loom to contact with the thole pins.

4. An oar element as in claim 2, having an aperture giving access to the interior chamber, and a removable plug normally tightly closing said aperture.

5. An oar formed of an element as in claim 2, and including a separate handle member closing the end of the loom.

6. An oar formed of an element as in claim 2, and including a separate handle member closing the end of the loom, and a wear sleeve located at the joint between loom and handle, and positioned to contact with the thole pins.

7. An oar formed of an element as in claim

2, and including a separate member closing the end of the loom, means for clamping the handle member and loom together to exclude water, said means being releasable and said loom and handle members being longitudinally adjustable to vary the length of the oar.

8. An oar as in claim 1, including an upraised strengthening rib extending from the loom lengthwise of the blade.

9. An oar element of metal tubing, the blade being integral with the loom, and being formed by spreading the tubing material, and tapering in thickness towards the tip, the two faces of the blade being connected, inwardly of their side edges, at the tip only.

10. An oar element as in claim 9, the blade being reinforced by external ribs only, formed as extensions of the loom.

11. An oar including blade and loom of one integral piece of metal tubing.

12. The process of making oars from tubing which consists in heating and drawing the tubing to form a loom tapering to a reduced neck, and spreading and flattening the end to form a hollow blade integral with the loom.

13. The process of making oars from metal tubing which includes the step of spreading and flattening the end of the tubing to form a hollow blade at one end thereof.

Signed at Seattle, King County, Washington, this eighth day of March, 1928.

PHILLIP R. ANDREWS.