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R. S. DANFORTH

2,576,390

ANCHOR

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FIG. 1

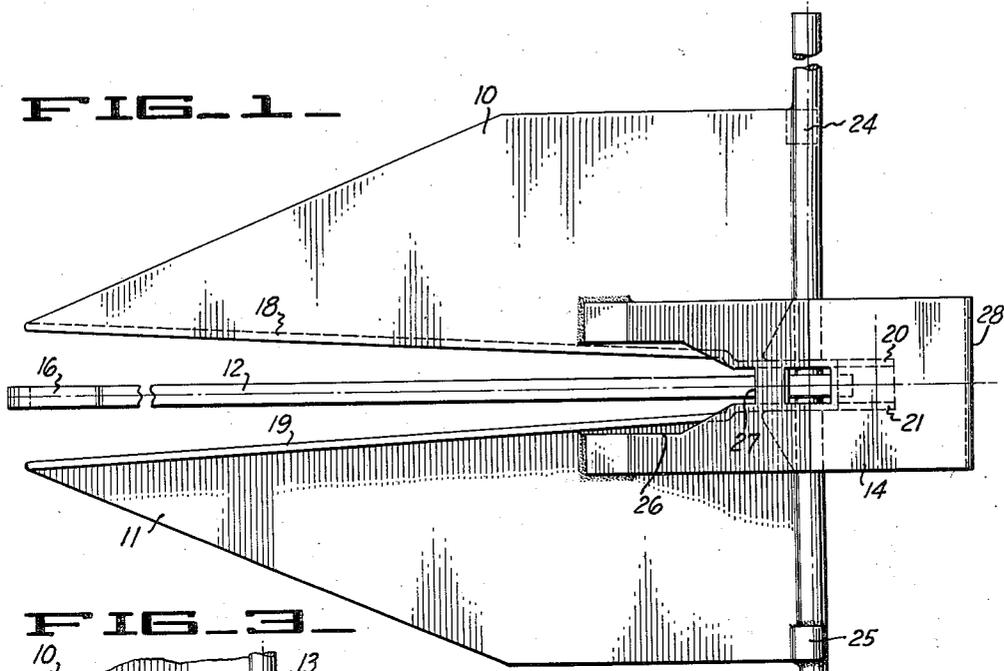


FIG. 3

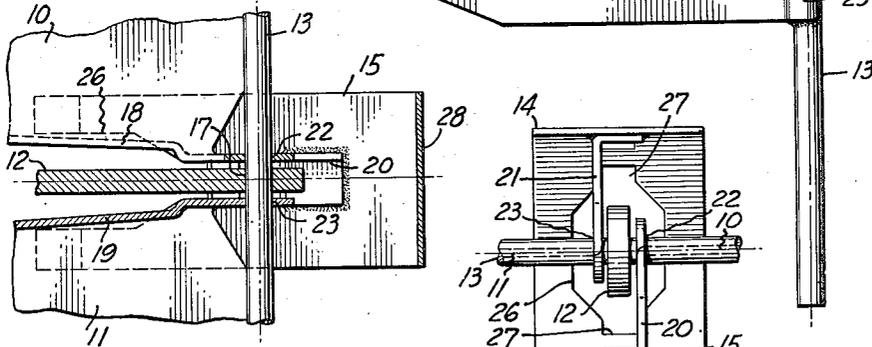


FIG. 4

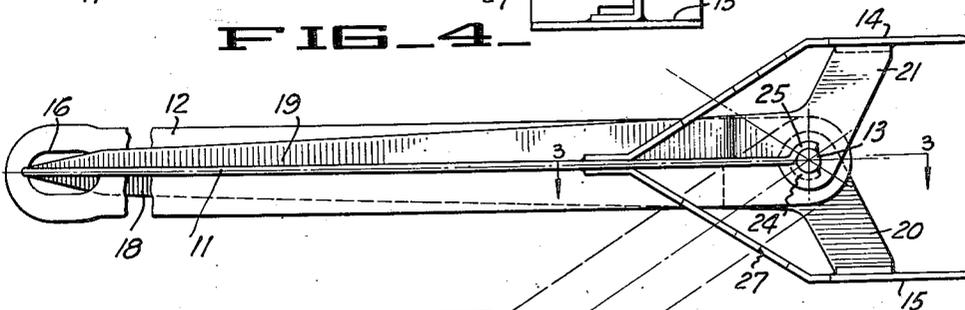
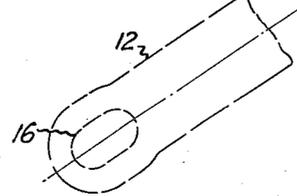


FIG. 2



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2,576,390

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2 Claims. (Cl. 114—208)

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This invention relates to a twin fluke type of anchor.

In patents 2,249,546, 2,282,566, 2,320,966, 2,354,666, and in application Serial No. 696,001, filed September 10, 1946, I have disclosed various improvements in twin fluke anchors. Certain of these have to do with the arrangement and provision of various structural elements of the anchors, while others have to do with the inter-relationship of the various parts of the anchor necessary to secure optimum results with this type of anchor.

This invention relates to structural modifications of a twin fluke anchor for various purposes, among them being to make the construction simpler and more economical, especially in connection with the construction of anchors of relatively light weight and high holding power.

One of the objects of the invention is to provide an anchor of this type requiring very few different parts so that manufacturing operations are greatly simplified.

A further object is to provide a twin fluke anchor of very simple construction and in which substantially all operative parts are so provided that the weight of the anchor is reduced substantially to a minimum for a given holding power.

The invention is especially applicable to anchors of a size which may be constructed by assembly of pre-formed sheet metal parts, which may be made as by stamping, as will become clear in the disclosure of the anchor which is the subject of this invention. The parts necessary for the production of the complete anchor are reduced to the fewest possible number, as will be more fully explained hereinafter. The designing of the parts is such though that even if they be made by different processes, for example, by casting or forging, particularly in the case of larger sizes, there will still be many advantages due to the simplification and reduction in the number of parts and in the weight of these parts.

In the accompanying drawing Figure 1 is a plan view of a complete anchor constructed in accordance with this invention.

Figure 2 is a side elevation of the anchor showing in dotted lines the permitted angular motion of the shank with relation to the flukes.

Figure 3 is a partial section on line 3—3 of Figure 2.

Figure 4 is an end view taken as from the right in Figure 1 but with the guard plate 28 omitted for clarity.

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The anchor, as shown in the drawing, includes the flukes 10 and 11, the shank 12, stock 13 and crown plates 14 and 15. The flukes are secured in coplanar relationship to the stock on either side of the shank 12 which has at one end the eye 16 for securement to the anchor chain, and at the opposite end the pivot hole 17 through which passes the stock.

The flukes 10 and 11 include the reinforcing ribs 18 and 19 which are formed on the edges nearest the shank by, in this instance, bending the material of the fluke upward at an angle of approximately 90 degrees to the plane of the fluke.

Integral with the reinforcing ribs 18 and 19 are the crown attachment brackets 20 and 21, respectively, each of which includes an opening 22 and 23, respectively, through which the stock passes to aid in securement.

At a corner of each fluke there is provided a lug for welding to the stock, these being 24 and 25, respectively. The rear edges may be welded as desired, in addition, or in substitution for this type of attachment.

As is best shown in Figures 2 and 4, the crown plates 14 and 15, formed by bending from sheet or plate stock, are secured as by welding or brazing to opposite sides of the flukes. Each crown plate is cut away at 26 to permit a predetermined and limited pivoting movement of the shank upon the stock from one side of the plane of the flukes to the other. A shoulder 27 in each plate constitutes a stop for the shank and the two crown plates are so shaped and located as to limit the relative movement between the flukes and the shank so as to establish the desired maximum angular relation between the shank and the plane of the flukes.

As shown in Figures 1 and 2, but omitted from Figure 4, there is preferably provided a plate 28 welded at each end to the outer free ends of the crown plates to provide support between the plates when the anchor is undergoing burial in addition to that afforded by crown attachment brackets 20 and 21. Plate 28 also acts as a guard preventing fouling of the anchor chain between the crown plates.

It will have been noted that the flukes are identical, as are the crown plates, each with the other. Each fluke and each crown plate may be made from a blank of sheet or plate having sufficient thickness for the strength desired, by the simple and relatively economical process of cutting and stamping.

In the lighter gages, the flukes and crown

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plates may be made by use of the sheet metal brake to establish the flanges 18, 19, the brackets 20 and 21, and the proper angular shape of the crown plates. There are, therefore, only seven parts, namely, shank, flukes, crown plates, guard plate and stock to be made up prior to assembly of the device into a complete anchor and of these the flukes and crown plates are identical so that, while seven parts are required, there are, at the most only five different items.

While especially useful in making the smaller sizes of anchors, sufficient strength of material for which is found in the lighter plates and sheets, the design also has advantages when the anchor is to be made from parts cast or forged. The one will require a minimum of molds, and the other a minimum of die parts. In any case, the parts will be of a minimum weight for a given size anchor.

The anchor contemplated may be in all functional parts like those which I have previously disclosed and the various features of these earlier anchors, not inconsistent one with the other, may be employed or utilized with this.

If desired, the structure can be further simplified by forming the two crown plates 14 and 15 and guard plate 28 of one plate cut and bent to suitable shape. The guard plate can be lightened by cutting holes therein or by relieving the plate between the opposite vertical terminal edges so that, while the plate functions as a guard, its weight is reduced. Crown attachment brackets 20 and 21 can be separately formed and then secured, as by welding, to the fluke flanges.

I claim:

1. An anchor fabricated for assembly from plate elements comprising a stock; a shank mounted approximately centrally of the stock and pivotally mounted thereon; identical coplanar flukes fashioned from plate elements and

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mounted on opposite sides of the shank and joined to the stock along their rear edges; each fluke including a flange extending along that edge of the fluke adjacent the shank substantially normal to and in at least one direction from the plane of the fluke; each fluke flange extending rearwardly of the flukes to provide a mounting for the fluke on the stock and an extension projecting normal to the plane of the fluke; and a crown comprising a pair of plates each bifurcated generally centrally of one end and bent to provide first and second crown plate portions, the first crown plate portion including spaced bifurcations each engaged with the flukes on opposite sides of the shank and each extending outwardly and rearwardly to a second crown plate portion extending substantially parallel to the plane of the flukes and spaced therefrom; each fluke flange extension extending away from the plane of the fluke; and means securing each extension to one of said second crown plate portions to support said second crown plate portion.

2. The anchor assembly set forth in claim 1, wherein a guard plate interconnects the ends of said second crown plate portions, thereby preventing fouling an anchor chain between said crown plate portions.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,249,546	Danforth	July 15, 1941
2,354,666	Danforth	Aug. 1, 1944
2,451,719	Danforth	Oct. 19, 1948