

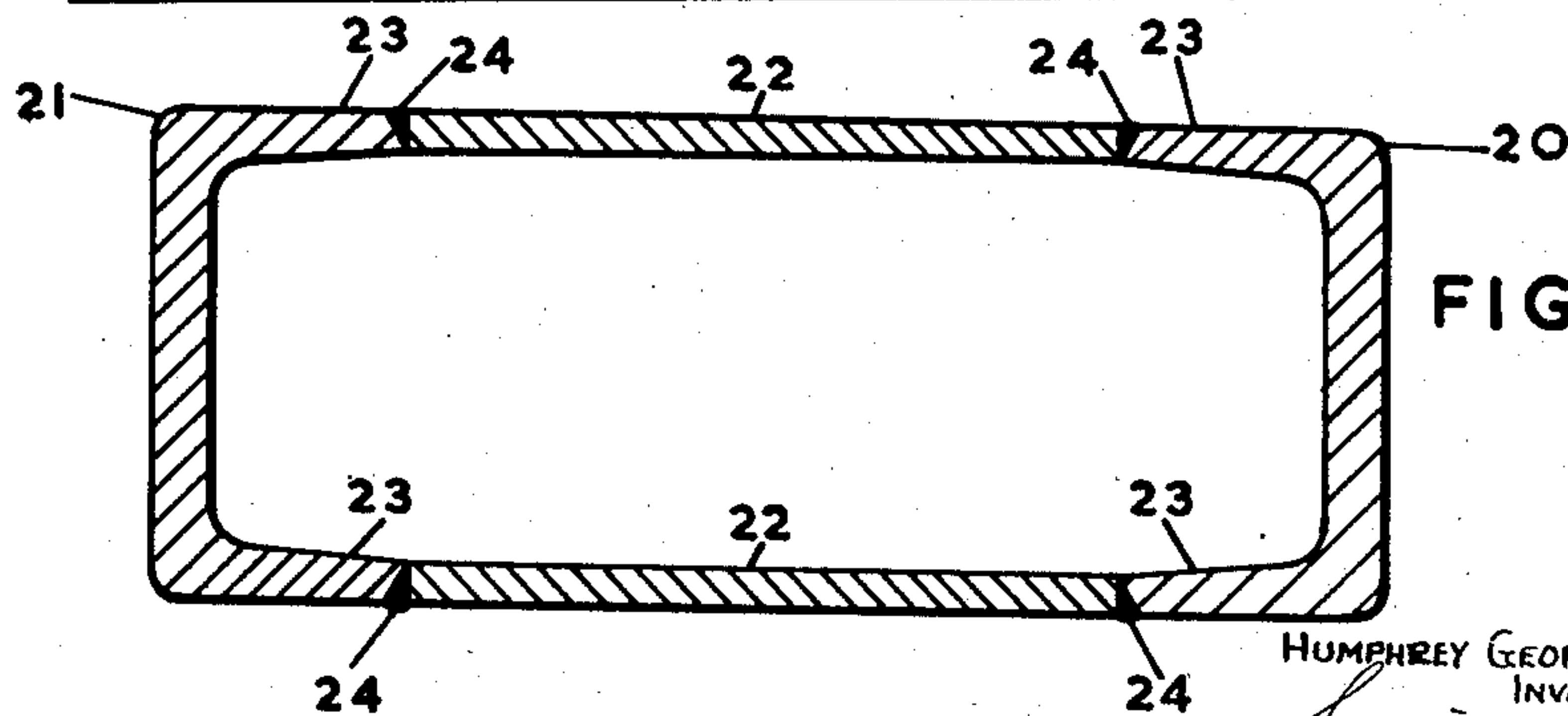
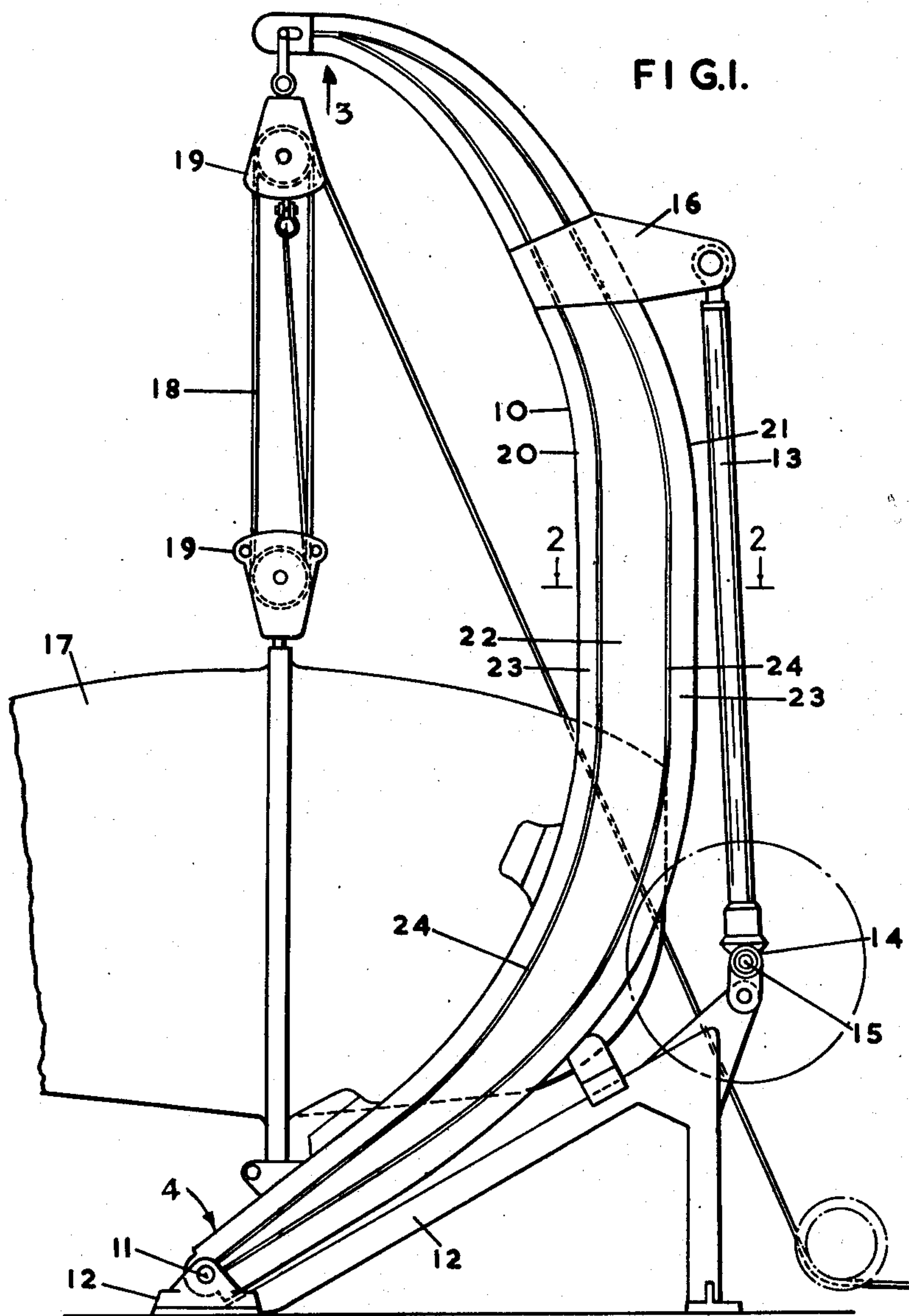
Nov. 17, 1953

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SHIP'S DAVIT

2,659,093

Filed Nov. 13, 1951

3 Sheets-Sheet 1



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FIG. 3.

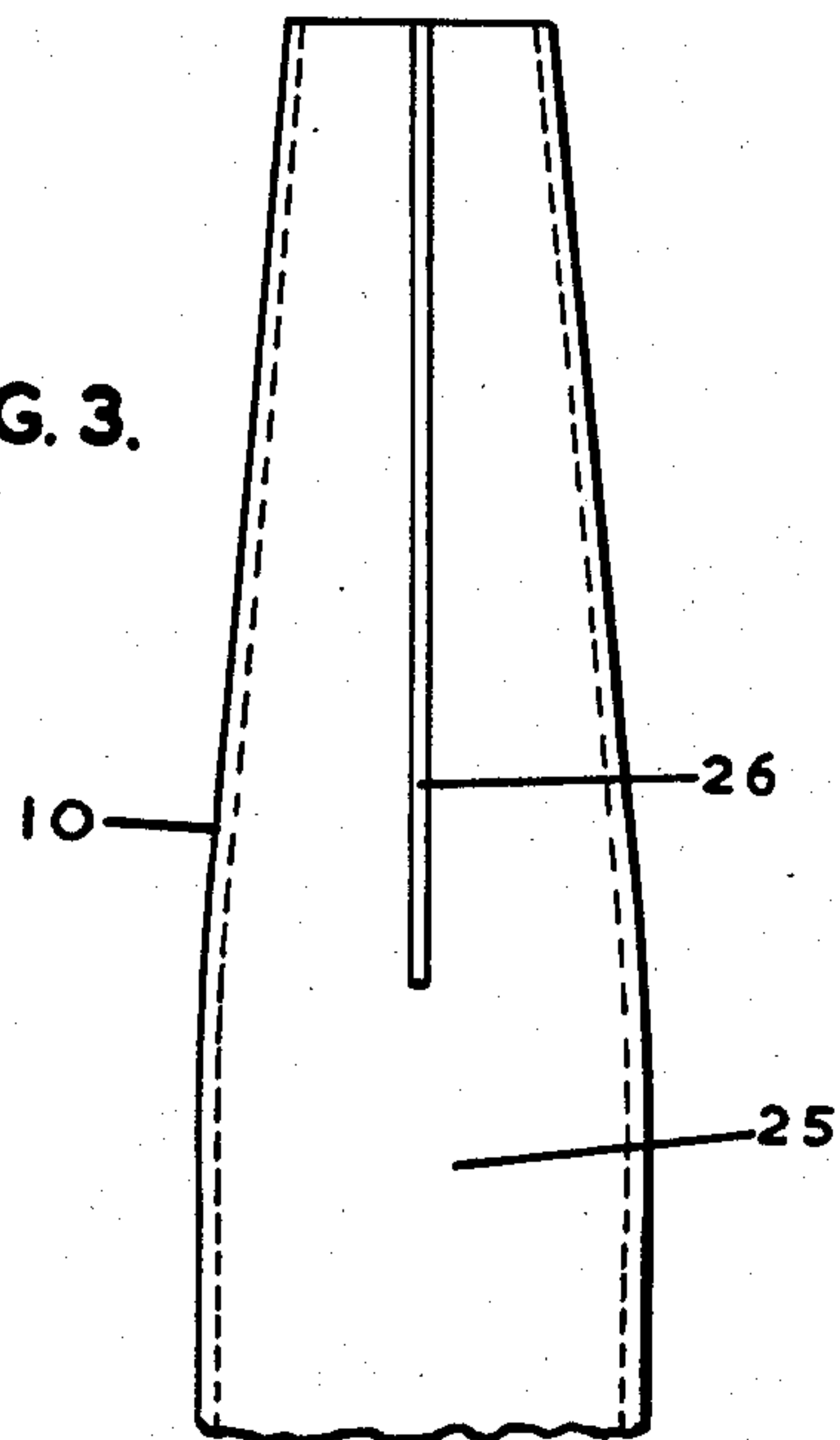
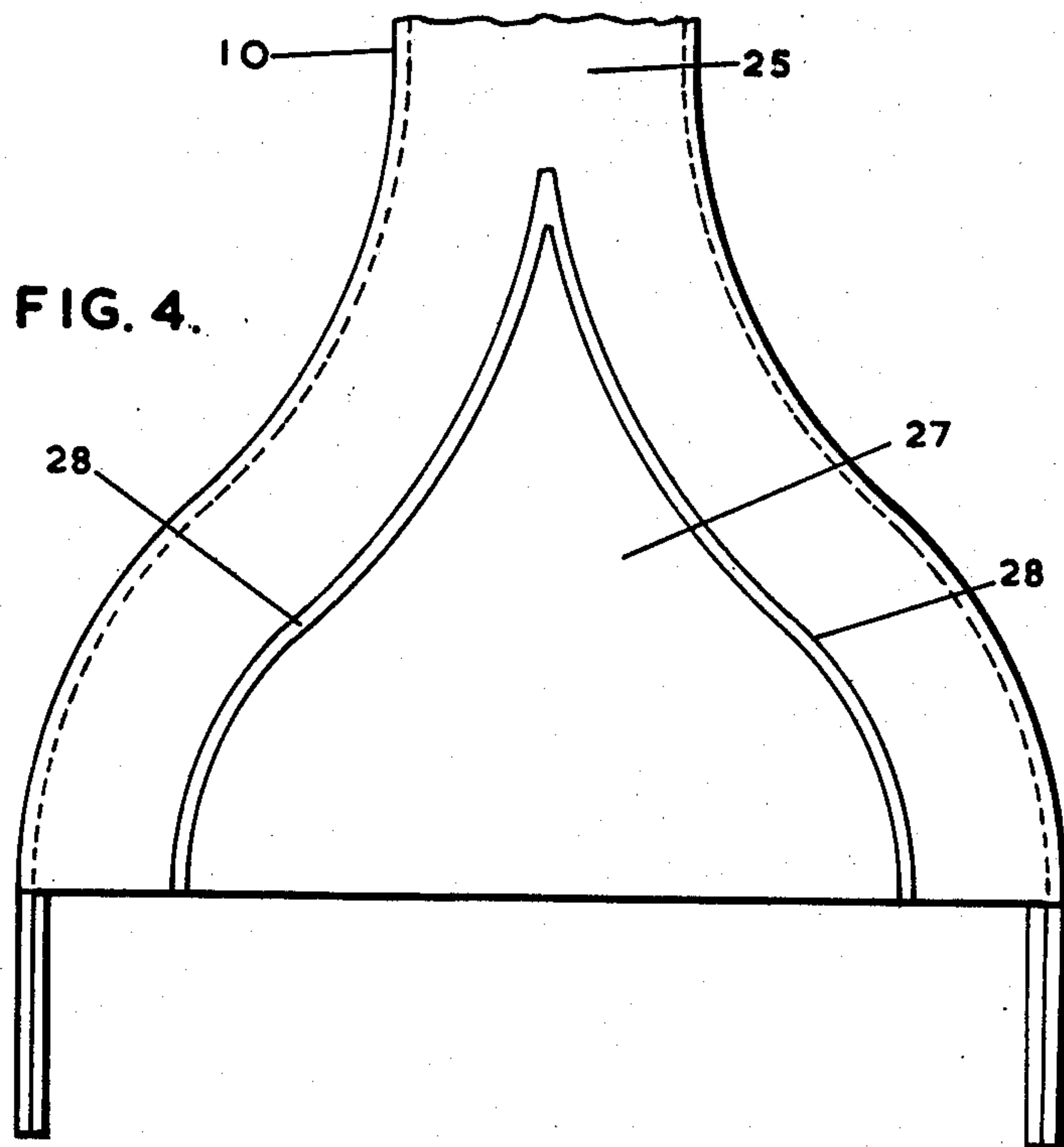


FIG. 4.



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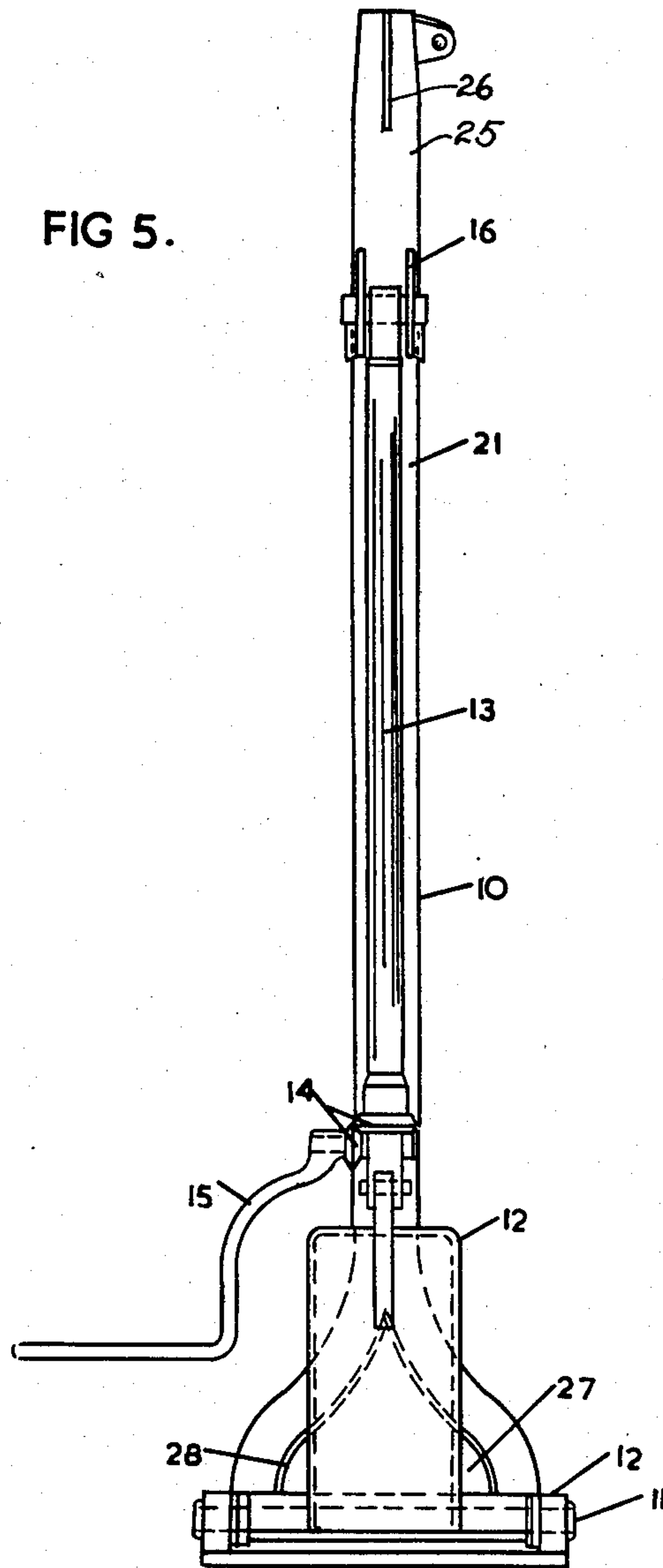
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FIG 5.



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SHIP'S DAVIT

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6 Claims. (Cl. 9—39)

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This invention relates to ships' davits and more particularly to the fabrication of davit arms.

Modern ships' davits are usually of the luffing or gravity type in which the davit arm is pivoted about one end, luffing gear is attached at an intermediate point and the boat is suspended from the other end as an overhanging load on the beam formed by the davit arm. It is usual to make the davit arm of simple rectangular box section and to fabricate it from flat plates or strips suitably shaped and bent and then welded together. This construction has the disadvantage that the longitudinal welds occur at points of high stress concentration, that is to say along the four corners of the box section arm which are distanced from the neutral axis. The present invention has for its object to provide a rectangular box section construction of davit arm in which this disadvantage is minimised or considerably reduced.

According to the invention, the davit arm comprises inner and outer members of channel section disposed with their open sides confronting each other, said channel members being interconnected by side plates which are welded to the edges or marginal portions of the opposed flanges of the said two members so as to complete the simple rectangular box section.

In this way the longitudinal welds employed in the fabrication are distanced from the corners of the box section and are, in consequence, nearer to the neutral axis of the arm than would be the case if the arm were fabricated from inner, outer and side plates assembled as a box section and welded together down the corners.

The inner and outer channel members would preferably be formed as extrusions in aluminium alloy and the side plates would preferably be of similar material.

Where the davit arm is other than of uniform cross section throughout, the inner and outer channel members would be bent to the required shape and the side plates would be profiled to suit. The arm may be tapered or flared in the lateral plane perpendicular to the side plates by cutting longitudinally the bases or web portions of the channel members and, if the arm is to be tapered, removing material to allow the edges of the cut-out to be brought together and welded up or, if the arm is to be flared, separating the edges formed by the cut and welding in appropriately shaped gusset plates or fillets.

The invention will now be described with reference to the accompanying drawings, which show one embodiment by way of example, and in which:

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Fig. 1 is a side elevation of a ship's davit, in inboard position, a ship's boat and lowering tackle being indicated.

Fig. 2 is an enlarged section of the davit arm taken on the line 2, 2, of Fig. 1.

Fig. 3 is an enlarged elevation of the davit arm, as viewed in the direction of the arrow 3 in Fig. 1.

Fig. 4 is an enlarged elevation of the bottom end of the davit arm, as viewed in the direction of the arrow 4 in Fig. 1.

Fig. 5 is a front elevational view of the davit arm shown in Fig. 1.

Referring to the drawings, each davit is of the kind comprising a davit arm, indicated generally by the reference numeral 10, which is approximately crescent-shaped in the vertical plane in which it is swung or luffed about the pivot pin 11 connecting its lower end to a deck fitting or frame 12, such swinging movements being effected by screw gear 13 operated through a bevel gearing 14 from a crank handle 15 at one end and connected at its other end to a bracket 16 on the arm 10. The ship's boat 17 is suspended from the free ends of the davit arms 10 by the usual wire falls 18 and fall blocks 19.

The crescent shaped davit arm 10 is of fabricated construction and comprises inner and outer members 20 and 21 respectively, which are of channel section extruded in aluminium alloy and disposed with their open sides confronting each other (see particularly Fig. 2). The channel members 20 and 21 are interconnected by side plates 22, also of aluminium alloy, secured in edge-to-edge relationship to the opposed flanges 23 of the members 20, 21 by welded joints 24, which joints are thus disposed longitudinally of the arm and spaced away from the corners thereof. The channel section members 20 and 21 are formed or bent to the required shapes, and the flat side plates 22 are edge shaped or profiled to suit, i. e. so that their inner and outer edges will conform to the contours of the confronting edges of the opposed flanges 23 to which they are welded.

Referring to Fig. 3, the arm 10 may be tapered in the lateral plane perpendicular to the side plates 22 by cutting longitudinally the bases or webs 25 of both channel members, removing material from each web 25 correspondingly, bringing the edges of the cut out together and welding them at 26.

Referring to Fig. 4, the arm 10 may be flared in the lateral plane perpendicular to the side plates 22 by cutting longitudinally the bases or webs 25 of both channel members, flaring the edges formed by the cuts, and securing appropri-

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ately shaped gusset plates or fillets 27 in position by welding at 28.

A tapered end, as shown in Fig. 3, is particularly suitable for the suspension or upper end portion of a davit arm, whilst a flared end, as shown in Fig. 4, is particularly suitable for fitting a long bearing or two widely separated bearings by which to pivot an arm to a deck fitting.

Davit arms fabricated according to this invention are of considerably reduced weight as compared with similar arms of steel, and since the longitudinal welded joints employed in fabrication are distanced from the corners, they are nearer to the neutral axis of the arm and in consequence undergo less stress than would be the case if the arm were simply fabricated from flat plates welded at the corners.

Having fully described my invention, what I claim and desired to secure by Letters Patent is:

1. In a fabricated davit arm of rectangular box section, inner and outer members of channel section disposed with their open sides confronting each other, side plates interconnecting said channel members and having their edge portions secured to the edge portions of the opposed flanges of said two members by welded joints disposed longitudinally of the arm and spaced away from the corners thereof, the adjacent edges of the flanges and the plates having substantially the same thickness.

2. A fabricated davit arm according to claim 1, wherein the inner and outer members are formed to the required shapes and the inner and outer edges of the said plates are shaped or profiled to conform to the confronting edges of the opposed flanges of the channel members.

3. In a fabricated davit arm of rectangular box section, inner and outer aluminium alloy extruded members of channel section disposed with their open sides confronting each other, aluminium alloy side plates interconnecting said channel members and having their edge portions secured to the edge portions of the opposed flanges of said two members by welded joints disposed longitudinally of the arm and spaced away from the corners thereof.

4. In a fabricated davit arm of rectangular box section, inner and outer members of channel section disposed with their open sides confronting each other, side plates connecting said channel

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members and welded in edge-to-edge relationship to the opposed flanges of said two members, a tapered portion in said davit arm, tapering in the lateral plane perpendicular to the side plates, said tapered portion being formed by cutting longitudinally the bases or web portions of the channel member, removing material from said base or web and bringing the edges of the cut-out together and welding them.

5. In a fabricated davit arm of rectangular box section, inner and outer members of channel section disposed with their open sides confronting each other, side plates connecting said channel members and welded in edge-to-edge relationship to the opposed flanges of said two members, a flared portion in said davit arm, flaring in the lateral plane perpendicular to the side plates, said flared portion incorporating gusset plates or fillets welded to the edges of flared longitudinal cuts in the bases or web portions of the channel members.

6. A davit arm of rectangular box section, comprising inner and outer members of channel section disposed with the side flanges of each member confronting each other, side plates interconnecting said channel members and having their edge portions secured to the edge portions of the opposed flanges of said two members by welded joints disposed longitudinally of the arm and spaced away from the corners thereof, the edge of each flange being bevelled and the corresponding edge of each plate having a square edge to provide a V-shaped slot for the reception of the welding metal.

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