May 19, 1925. 1,538,783

K. DINGERTZ

DAVIT ARM

Filed Aug. 8, 1923

Fig.1

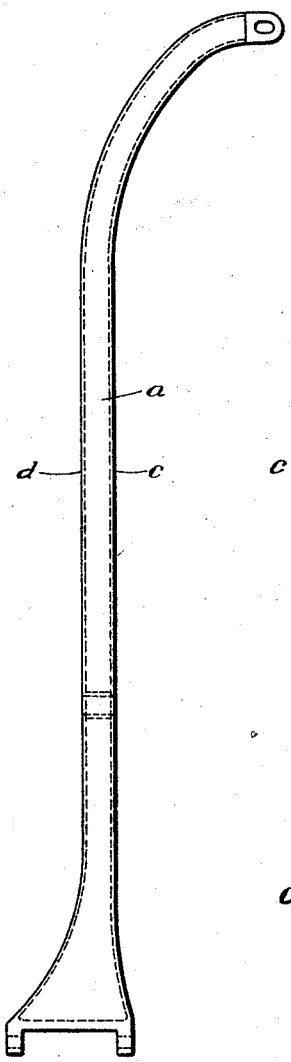


Fig.3

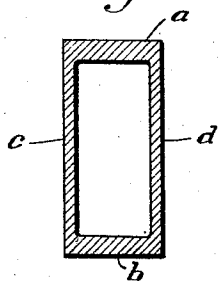


Fig.4

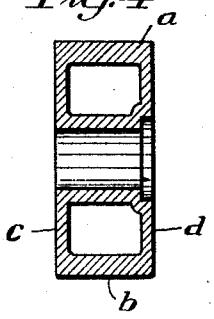
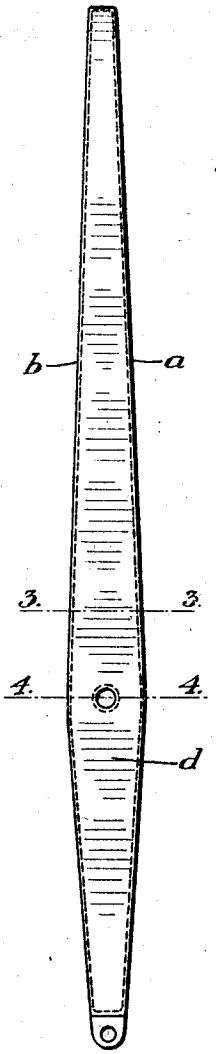


Fig.2



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UNITED STATES PATENT OFFICE.

KARL DINGERTZ, OF ALINGSAS, SWEDEN.

DAVIT ARM.

Application filed August 8, 1923. Serial No. 656,376.

To all whom it may concern:

Be it known that I, KARL DINGERTZ, a subject of the King of Sweden, residing at Alingsas, Sweden, have invented certain new and useful Improvements in Davit Arms, of which the following is a specification.

The arms as heretofore used in swingable boat davits are provided, as a rule, with either a U-shaped or an I-shaped cross section.

These cross sections require comparatively great wall thicknesses when exposed to twisting strains. They withstand bending stresses comparatively better. When exposed both to bending and twisting stresses exceedingly great thicknesses will be called for. Moreover, such cross sections do not admit of a favourable relation between the two moments of resistance calculated on the main axes extending at right angles to one another.

Davit arms having a circular cross section will also be found in practice. Such cross section, however, although offering a favourable moment of resistance with respect to twisting strains, is not so advantageous as regards bending, in relation to the section required to resist twisting.

Thus the said types of cross section will be found unfavourable for the reason that they involve waste of material for the attainment of the moments of resistance calculated with respect to twisting and bending.

Calculations show that hollow box-like davit arms of square cross section answer the requirements most favourably. Such arms with hollow cross sections may possibly be cast, which procedure, however, involves great technical difficulties. To overcome these difficulties the davit arms are according to this invention composed of several parts, which are welded together along their longitudinal edges. Davit arms composed of rolled steel or steel plates shaped on the lines of the external surfaces of the arms, and welded together to form the desired box-like structure of square cross section, will prove of special advantage. Preferably, four strips of suitable thickness should be used for the purpose.

In the accompanying drawing, Fig. 1 is a lateral elevation and Fig. 2 a rear view of the davit arm according to the invention. Figs. 3 and 4 show cross sections respectively on the lines 3—3 and 4—4 in Fig. 2.

In the embodiment of the davit arm disclosed, it is assumed that the same is composed of four plates. The two plates *a* and *b* correspond to the sides of the arm, and form substantially narrow strips, the upper portions of which are bent off in an edgewise direction, whereas the wider plates *d* and *c* are somewhat tapering from the place, at which the force acts, toward their ends, while being bent off in a flatwise direction, corresponding to the curvature of the plates *a* and *b*. The plates formed in the manner described are then welded together. For holding the arm to the strip, the operating means, and the load carrying means special parts are made and fixed to the arm in any suitable way.

Instead of being composed of four plates, as above described, the arm may be produced in any other suitable way, provided the same is hollow in a box-like fashion. For instance, it may be composed of four angle irons or out of two U-irons, or of one U-iron and a plate.

As will be verified by calculations of the moments of resistance, a davit arm of the new cross sectional form may be made considerably lighter than all advit arms as heretofore known, due regard being paid to the desired resistance of the material not only with respect to bending about the one or the other principal axis, but also with respect to twisting.

Reduction of weight is of great importance in ships' davits and similar contrivances where the question of deck load calls for consideration.

It must be understood that in some instances another cross sectional form may be used for special purposes provided the arm is composed of several parts welded along

their edges. Thus an oval or similar form of the cross section can be used.

What I claim as new and desire to secure by Letters Patent of the United States of America is:—

A davit arm for luffing davit made of cast steel or rolled iron and formed into a rectangular hollow section by means of welding in the longitudinal direction of the arm.

In testimony whereof I affix my signature.

KARL DINGERTZ.

Witness:
OSCAR BRAM.