

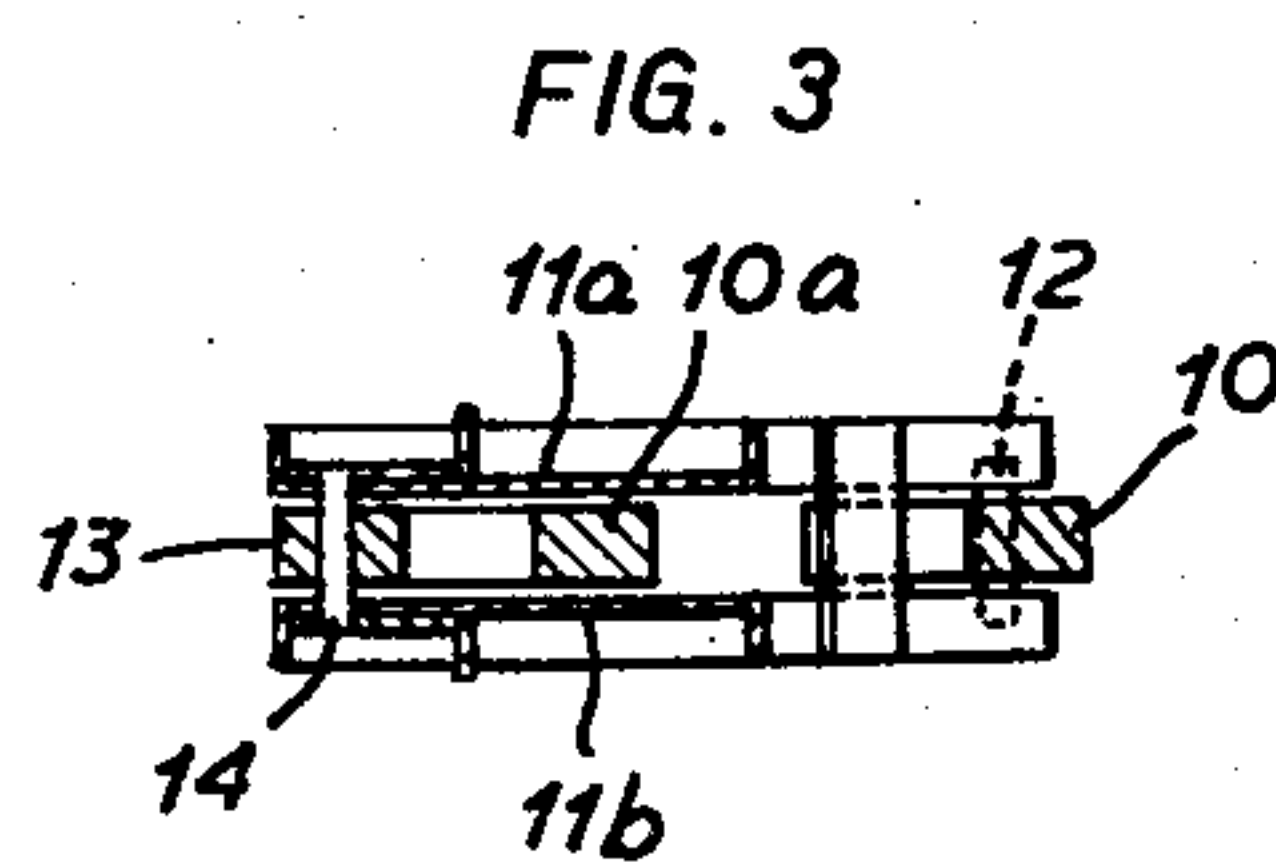
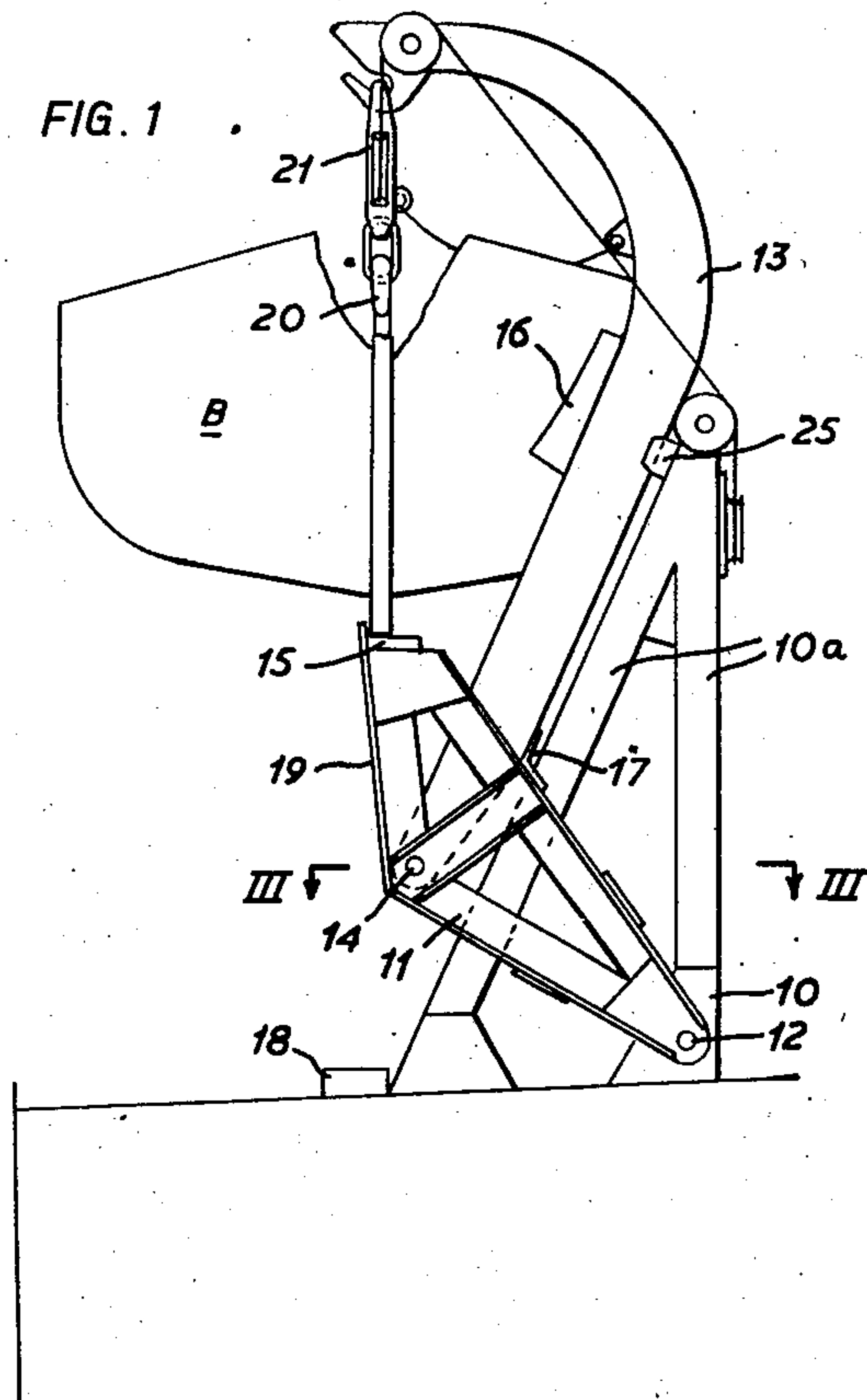
**Sept. 2, 1958**

**W. G. MOORE**  
**GRAVITY DAVIT**

**2,849,732**

Filed Dec. 20, 1955

**4 Sheets-Sheet 1**



Inventor  
WALTER G. MOORE  
By  
F. W. Smith

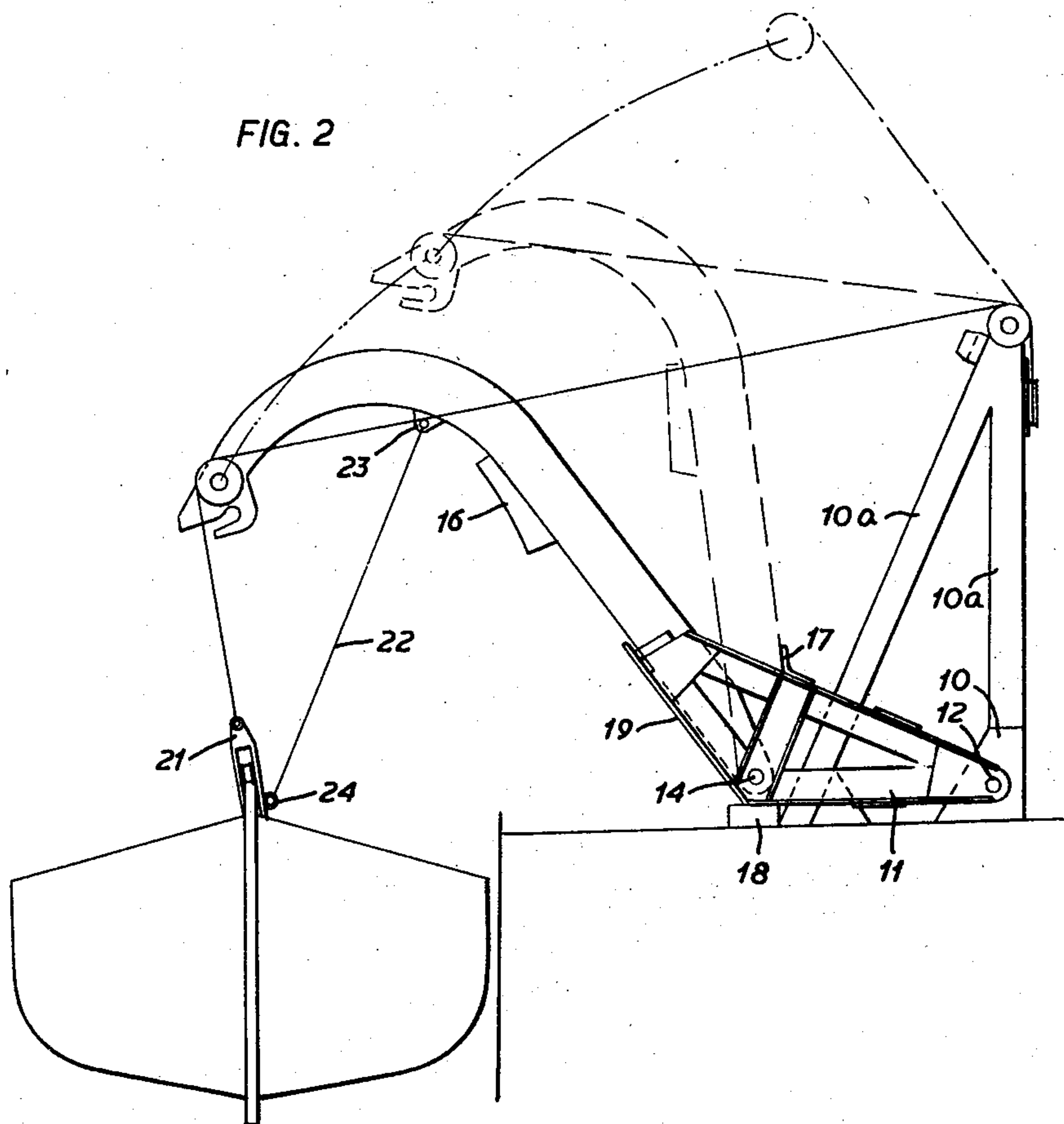
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GRAVITY DAVIT

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4 Sheets-Sheet 2



Inventor  
WALTER G. MOORE  
By  
*Minic & Wiley*  
Attorneys

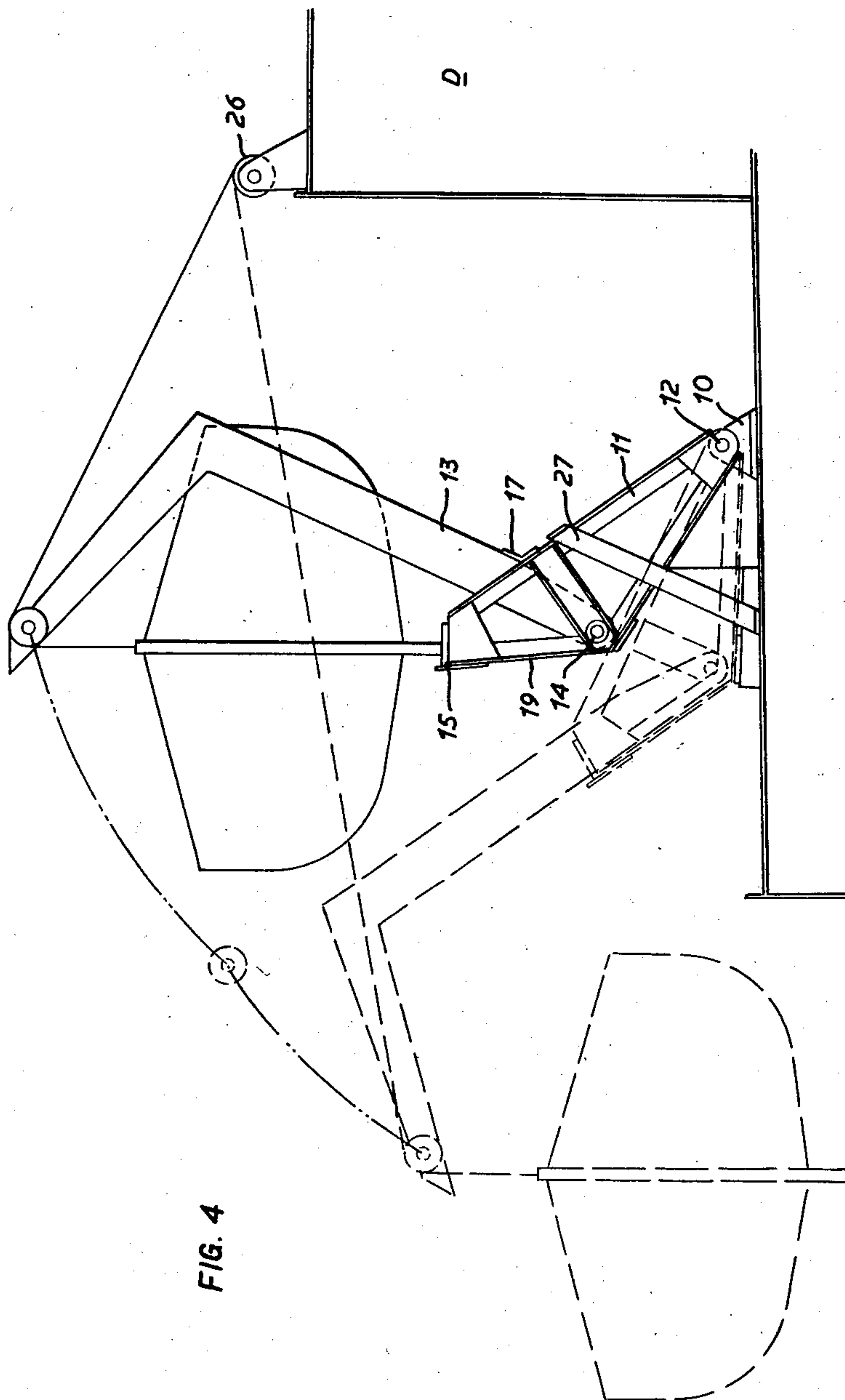
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GRAVITY DAVIT

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4 Sheets-Sheet 3



Inventor  
WALTER G. MOORE  
By

*Walter G. Moore*

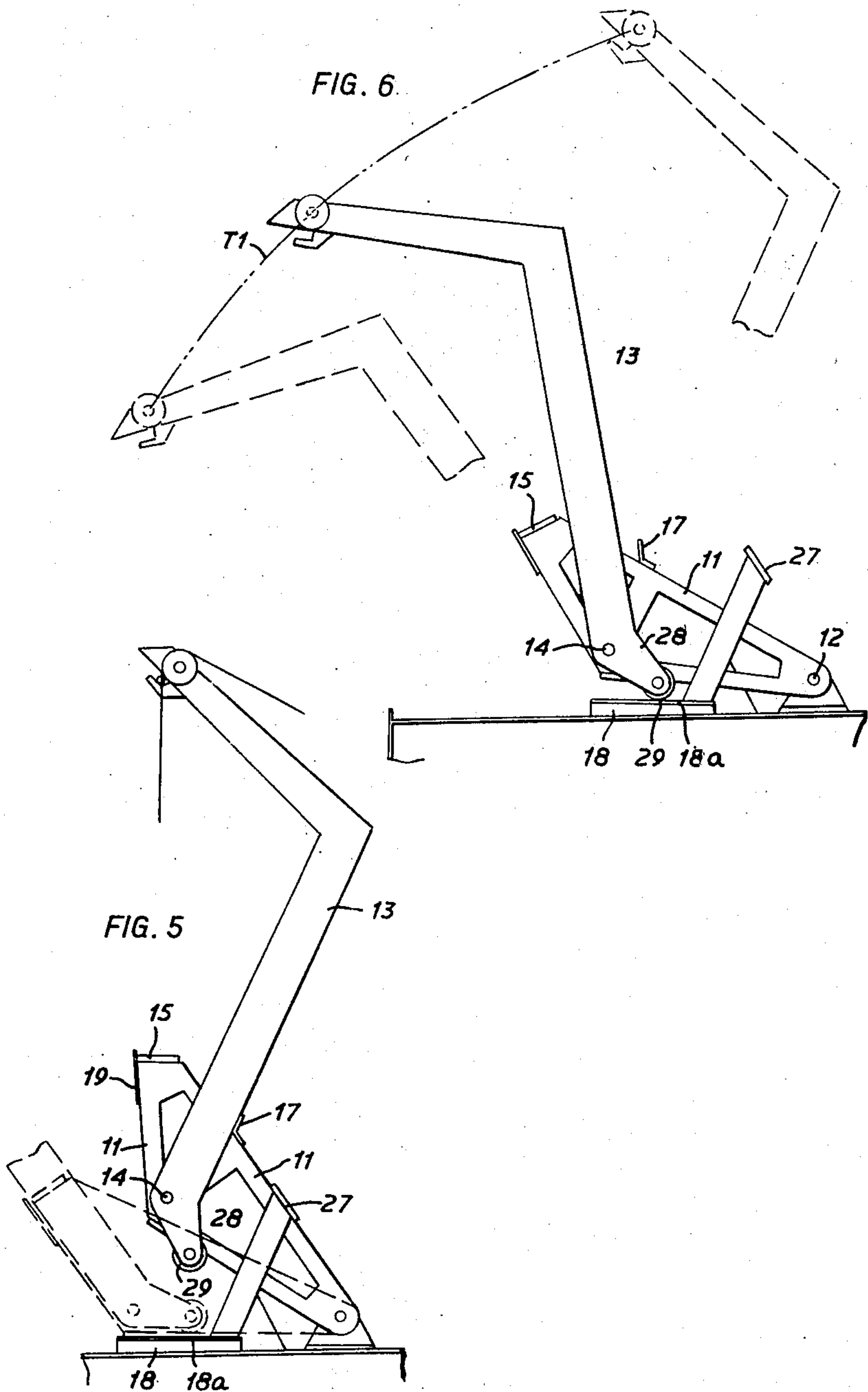
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4 Sheets-Sheet 4



Inventor  
WALTER G. MOORE  
By  
*Walter G. Moore*



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2,849,732

## GRAVITY DAVIT

Walter Gordon Moore, Tankerton, Whitstable, England,  
assignor to Marepa Trust Limited, Tankerton, England,  
a British company

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5 Claims. (Cl. 9—36)

This invention is for improvements in or relating to gravity davits and the like.

A single arm pivoted at the deck although simple as a single unit presents disadvantages in the matter of operation. For instance, the pivot connecting the heel of the davit arm must of necessity be well inboard of the keel line in order to afford the statutory degree of gravitational bias which is that the davit should move outboard under the action of gravity even although the ship on which it is fitted has an adverse list of up to 25 degrees. At the same time the davit head must have an outreach sufficient to allow for the necessary ship's-side clearance. Thus the overall height of the davit head above the deck is much greater than is desirable. This in turn necessitates a long "span" from the davit head to the lifeboat lifting hook and results in a dangerous degree of swing of the boat which is not readily controlled from deck level.

The requirement is therefore for a davit having ample initial outboard bias, good outreach and at the same time a minimum of overall height.

There are many known types of davits in which an attempt is made to meet these requirements by carrying the davit arm on linkages and the like contained in a stand which is fixedly attached to the deck or other davit supporting structure.

The present invention departs from this principle and provides a gravity davit comprising a stand, a pivotal support for said stand, a davit arm pivoted in or on the stand, a back-stop on the stand for the davit arm so that during the latter part of the inturning movement of the arm the arm and stand are uptilted together as a unit about the pivot of the stand and a stop for halting movement of the stand during outboard movement of the davit, the arm being free to continue its outboard movement relatively to the stand to a predetermined extent after the latter has been halted. In other words the stand is free to pivot outboard and the davit arm is free to hinge through an angle, preferably a small angle, within the stand and so increase the total outreach which is beyond that possible with an arm of equivalent height pivoted on a fixed stand. Advantage results from the short span or tackle by which it is possible to connect the lifeboat to the davit thereby limiting the possible amount of swing of the boat. There is also advantage in the consequent handiness in embarking passengers and crew. Stability factors are also favourable.

The foremost end of the movable stand may constitute a support or rest for the keel of the lifeboat when in the inboard or stowed position. The size and weight of the movable stand may be such that it adds materially to the outboard bias of the arm. Initially of course the movable stand and the arm will move outboard together as a unit. After a predetermined downward and outboard movement of the stand it is brought to a halt but the arm continues to make at least a small arc of movement until it also is halted at the fully outboard position of the davit. Having regard to the low overall height of the davit, despite the relatively long and advantageous

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outreach obtained by the additive movements of the movable stand and the arm, only a relatively short span or length of tackle exists or is required between the davit arm head and the lifting hook in the boat at any position between the fully inboard position and the fully outboard or embarkation position of the boat. Thus, any considerable degree of uncontrolled swing of the boat on the said tackle is impossible.

Some specific embodiments of the invention will now be described by way of example with reference to the accompanying drawings wherein:

Figure 1 is a side elevation of a davit with the davit arm and boat in the inboard or stowed position,

Figure 2 is a further view of the davit shown in Figure 1 but with the davit arm and boat in the fully outboard position,

Figure 3 is a cross-section on the line III—III of Figure 1.

Figure 4 is a side elevation of a modified form of the davit shown in Figures 1, 2 and 3,

Figure 5 is a side elevation of a still further modification with the davit arm in the inboard position and

Figure 6 is a further view of the davit shown in Figure 5 but with the davit arm in the partially outboard position.

There will of course be two davits between which the lifeboat is supported in the usual way, but as these two davits are of identical construction it will only be necessary to describe one in detail.

Referring to Figures 1, 2 and 3 of the drawings, the davit comprises a fixed bracket 10 and a movable stand 11, the bracket 10 being mounted, for example, on a ship's deck or on the roof of a deck house or in any other convenient position. The stand 11 is pivotally attached to the bracket 10 as indicated at 12. The davit arm is indicated at 13 and this is pivotally mounted at 14 on the stand 11. The stand may comprise two spaced angle-iron cheeks or side plates 11a and 11b (see Figure 3) between which the arm 13 is located. Similarly the Samson post 10a formed, in this particular case, as an extension of the bracket 10, may be located between said two cheeks or side plates forming the stand 11. This arrangement provides good lateral support for the arm and the stand. A rest or support 15 for the keel of the boat B is provided on the free end of the movable stand 11. A breasting block 16 is provided on the davit arm for the side of the boat. In its fully inboard position the arm 13 may rest against a supporting bracket or stop 17 on the stand 11. Outboard movement of the stand 11 is halted by a stop or block 18 on, for example, the ship's deck whilst outboard movement of the arm 13 is halted at the fully outboard position by a stop plate or the like 19 on the foremost end of the movable stand.

20 indicates the hook in the boat and it will be noted that the span or tackle 21 connecting this hook to the horn on the davit arm head is very short. Consequently even when the tackle 21 leaves the horn (see Figure 2) and a part of the fall rope is paid out to bring the boat to the embarkation position the span or length of tackle between the horn and the hook in the boat is still comparatively short and thereby excessive uncontrolled swing of the boat is avoided. Furthermore the gunwale of the boat and the grab-lines are convenient for manhandling if required.

A tricing pennant 22 may be anchored between the davit arm and the fall block as indicated at 23 and 24 respectively.

A stop 25 is provided on the bracket 10 for the davit arm.

In the inboard or stowed position the arm 13 engages or bears against the stop 17 within the stand 11 and arm and stand have become, under the tension of the controlling wire, a rigid upturned unit from the davit head



to the deck pivot 12. In paying out the fall to launch a boat the complete unit comprising the stand 11 and the arm 13 moves in a downward direction towards the ship's side until the stand engages the stop position at 18. From this position the arm alone continues its motion over the small arc of movement provided for within the frame 11.

With the construction above described the trace of the davit head is much more favourable to requirements and the stress in recovering the arm-cum-stand to the inboard position is less than would be occasioned in the case of a single pivoted arm having the same outreach. This is pronounced in the initial in-turning operation. There are also advantages in the matter of embarkation, stability, and in the matter of deck clearance. Furthermore the weight of the upturned movable stand 11 gives an additional and favourable bias in the outboard direction when the arm is required to move in the launching of a boat.

The bracket 10 need not, of course, be formed with a Samson post 10a, the only essentially fixed part of the davit proper being a small bracket or the like to provide the pivot 12 for the stand 11. Such an arrangement is shown, for example, in Figure 4 in which the davit lead is carried to a sheeve 26 on the deck-house D. A yoke-member 27 serves as a back-stop for the pivoted stand 11.

The davit shown in Figures 5 and 6 is similar to that shown in Figures 1, 2 and 3 and where applicable like reference numerals have been used to indicate like parts. The davit arm in this example, however, has a heel extension 28, adapted to engage the stop 18 during pivoting movement of the stand 10, for the purpose of damping down the deck impact stress and levelling out the trace of davit head movement as indicated by the line T1. The heel extension also has the effect of improving the outboard bias at the position of change of fulcrum. This change becomes gradual instead of being abrupt, which is an important factor where power units (e. g. electric motors) are employed to bring the davit inboard. A sudden change of load is undesirable in such circumstances. The heel extension may be provided with a roller 29 which runs on a track 18a on the stop 18 during the latter part of the pivoting movement of the stand.

The stop on the stand need not be at the rear of the davit arm but could be a flexible or extensible link or member coupling the arm to a forward part of the pivoted stand.

The track 18a for the heel-extension 28 or its roller 29 need not necessarily be flat or horizontal but may be inclined or curved so as to give some desired characteristic to the trace or path of movement of the davit arm head.

I claim:

1. A gravity davit comprising a stand including spaced apart cheek plates and a transverse abutment member at its forward part, a pivotal support for the rear of said stand, a davit arm pivoted on the stand forward of the latter's pivotal support with a substantial portion of its lower part between said cheek plates, a stop on the stand for the davit arm whereby during the latter part of the inturning movement of the arm said arm and the stand are uptilted together as a unit about the pivot of the stand, and a stop for halting movement of the stand during outboard movement of the davit, the arm having freedom to continue its outboard movement relatively to the stand to a predetermined extent, after the latter has been halted, until the arm is halted by said transverse abutment.

2. A gravity davit comprising a stand including spaced apart cheek plates and a transverse abutment member at its forward part, a pivotal support for the rear of said stand, a davit arm pivoted on the stand forward of the latter's pivotal support with a substantial portion of its lower part between said cheek plates, a stop on the

stand for the davit arm whereby during the latter part of the inturning movement of the arm said arm and the stand are uptilted together as a unit about the pivot of the stand, and a stop for halting movement of the stand during outboard movement of the davit, the arm having freedom to continue its outboard movement relatively to the stand to a predetermined extent, after the latter has been halted, until the arm is halted by said transverse abutment, said abutment being positioned on the stand so as to limit the movement of the arm relatively to the stand to substantially less than the initial angular movement of the stand and arm together in the outboard direction.

3. A gravity davit comprising a stand including spaced apart cheek plates and a transverse abutment member at its forward part, a bracket, a pivotal support on said bracket for the rear of said stand, a Samson post positioned between said cheek plates of the stand, a davit arm pivoted on the stand forward of the latter's pivotal support with a substantial portion of its lower part between said cheek plates, a stop on the stand for the davit arm whereby during the latter part of the inturning movement of the arm said arm and the stand are uptilted together as a unit about the pivot of the stand, and a stop for halting movement of the stand during outboard movement of the davit, the arm having freedom to continue its outboard movement relatively to the stand to a predetermined extent, after the latter has been halted, until the arm is halted by said transverse abutment.

4. A gravity davit comprising a stand including spaced apart cheek plates and a transverse abutment member at its forward part, a pivotal support for the rear of said stand, a davit arm pivoted on the stand forward of the latter's pivotal support with a substantial portion of its lower part between said cheek plates, a stop on the stand for the davit arm whereby during the latter part of the inturning movement of the arm said arm and the stand are uptilted together as a unit about the pivot of the stand, a stop for halting movement of the stand during outboard movement of the davit, the arm having freedom to continue its outboard movement relatively to the stand to a predetermined extent, after the latter has been halted, until the arm is halted by said transverse abutment, a heel extension on the davit arm and a stop for said heel extension, the heel extension being operative to engage said stop during pivoting movement of the stand.

5. A gravity davit comprising a stand including spaced apart cheek plates and a transverse abutment member at its forward part, a pivotal support for the rear of said stand, a davit arm pivoted on the stand forward of the latter's pivotal support with a substantial portion of its lower part between said cheek plates, a stop on the stand for the davit arm whereby during the latter part of the inturning movement of the arm said arm and the stand are uptilted together as a unit about the pivot of the stand, a stop for halting movement of the stand during outboard movement of the davit, the arm having freedom to continue its outboard movement relatively to the stand to a predetermined extent after the latter has been halted until the arm is halted by said transverse abutment, a heel extension on the davit arm, a roller on said heel extension and a stop having a track for said roller, the roller being operative to run on said track during pivoting movement of the stand.

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