

No. 896,961.

T. WATKINS.
DUMPING PAN.

PATENTED AUG. 25, 1908.

APPLICATION FILED SEPT. 23, 1907.

4 SHEETS—SHEET 1.

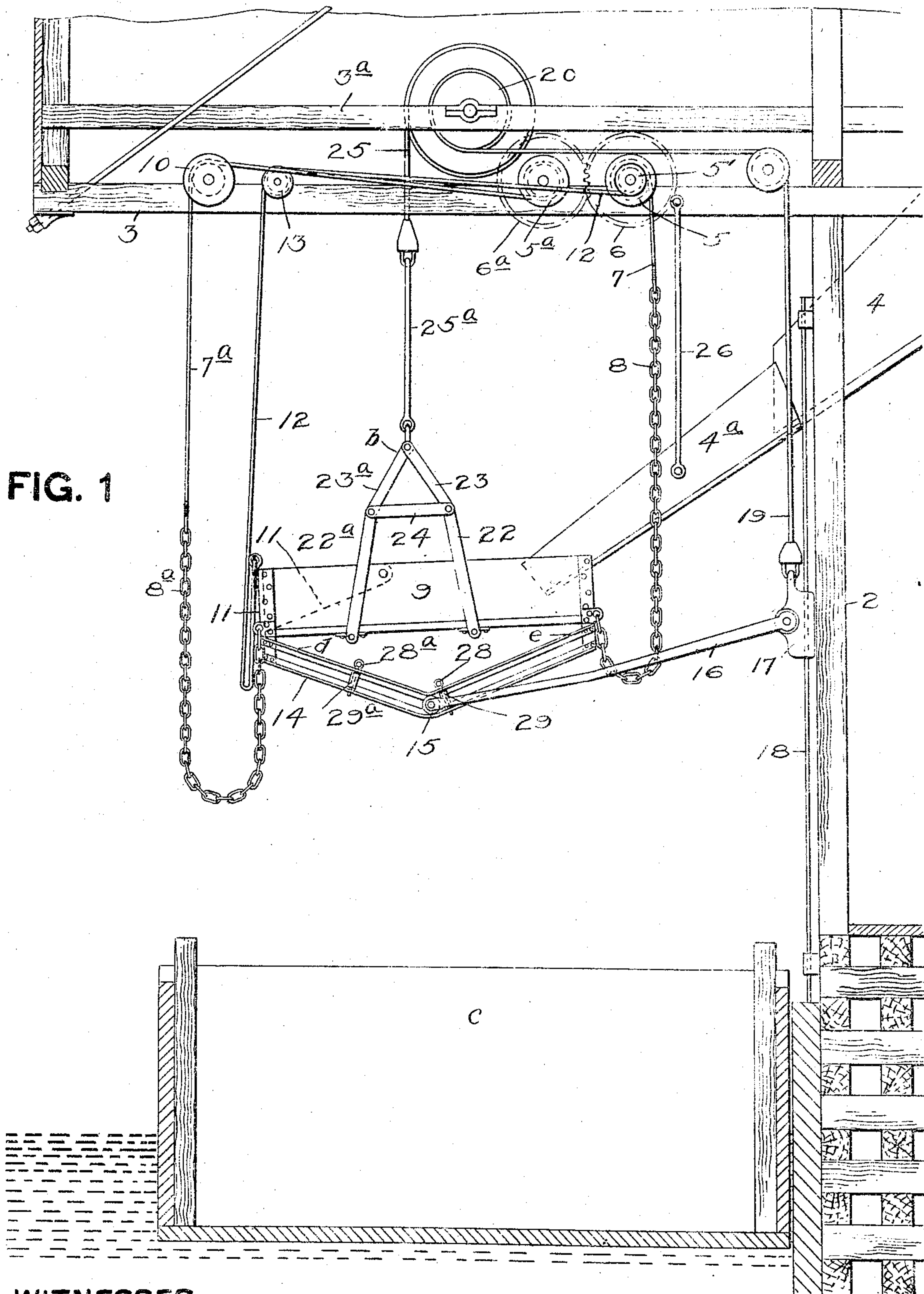


FIG. 1

WITNESSES.

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Thomas Watkins
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4 SHEETS—SHEET 2.

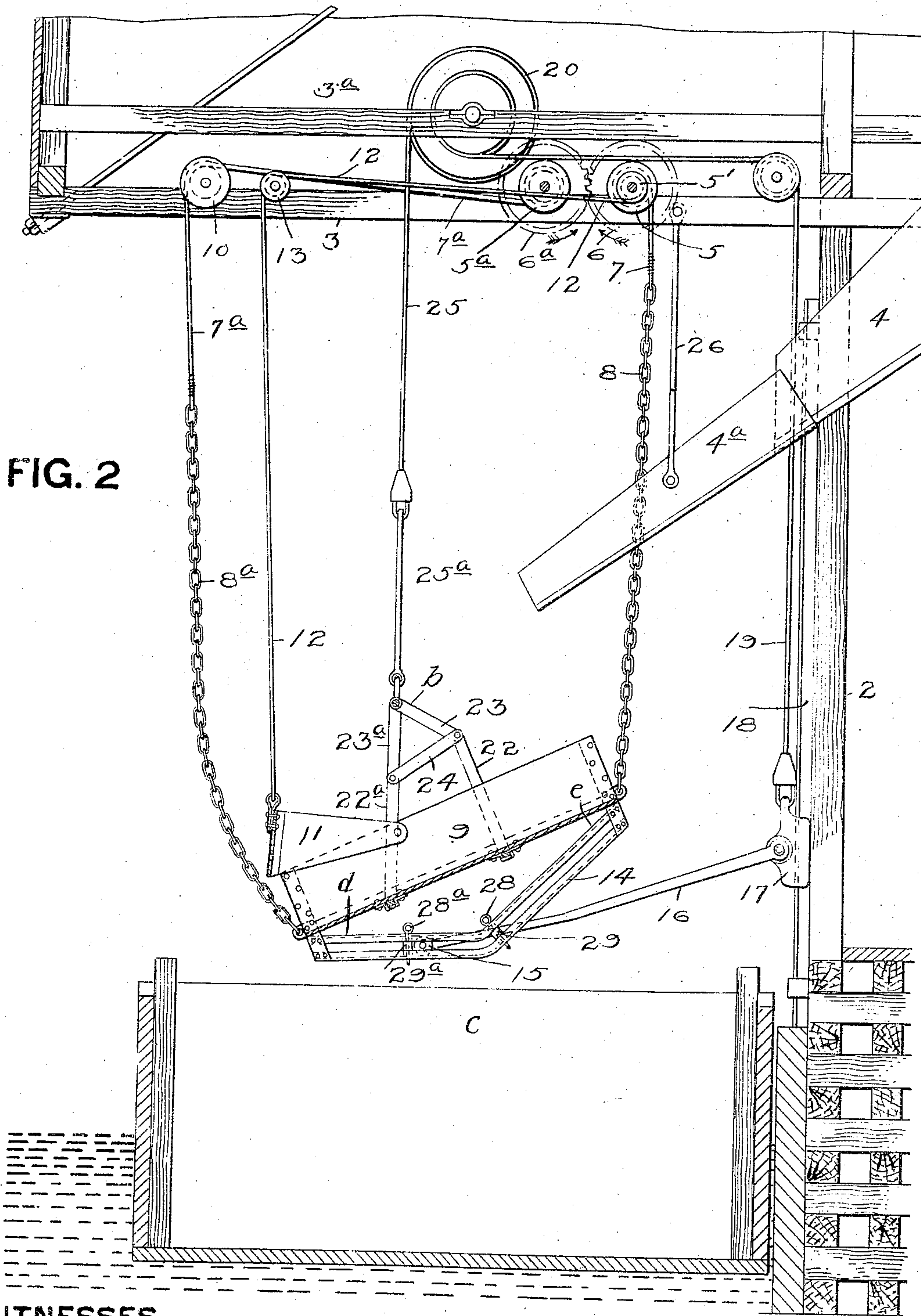


FIG. 2

WITNESSES.

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4 SHEETS—SHEET 3.

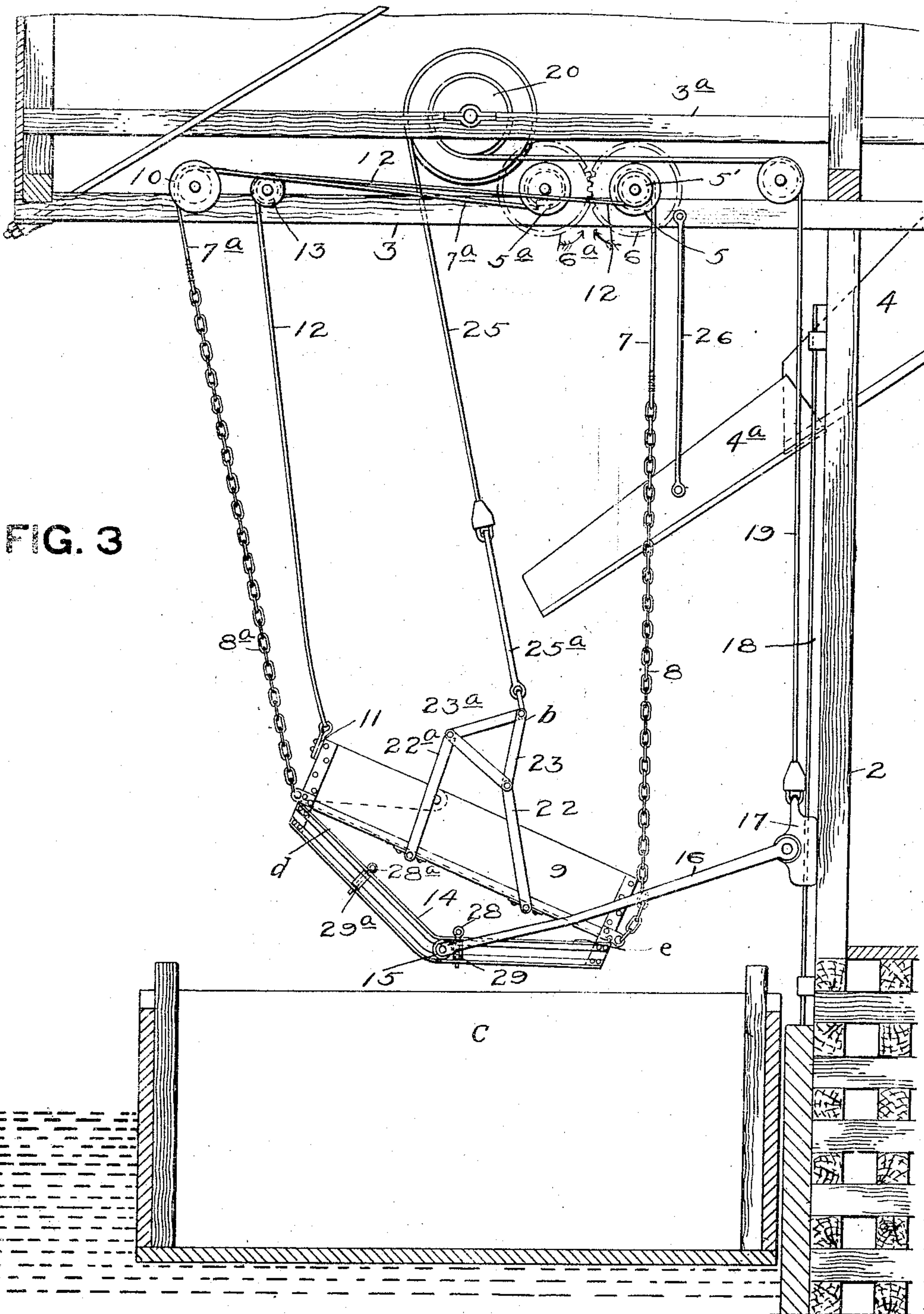


FIG. 3

WITNESSES.

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No. 896,961.

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4 SHEETS—SHEET 4.

FIG. 4

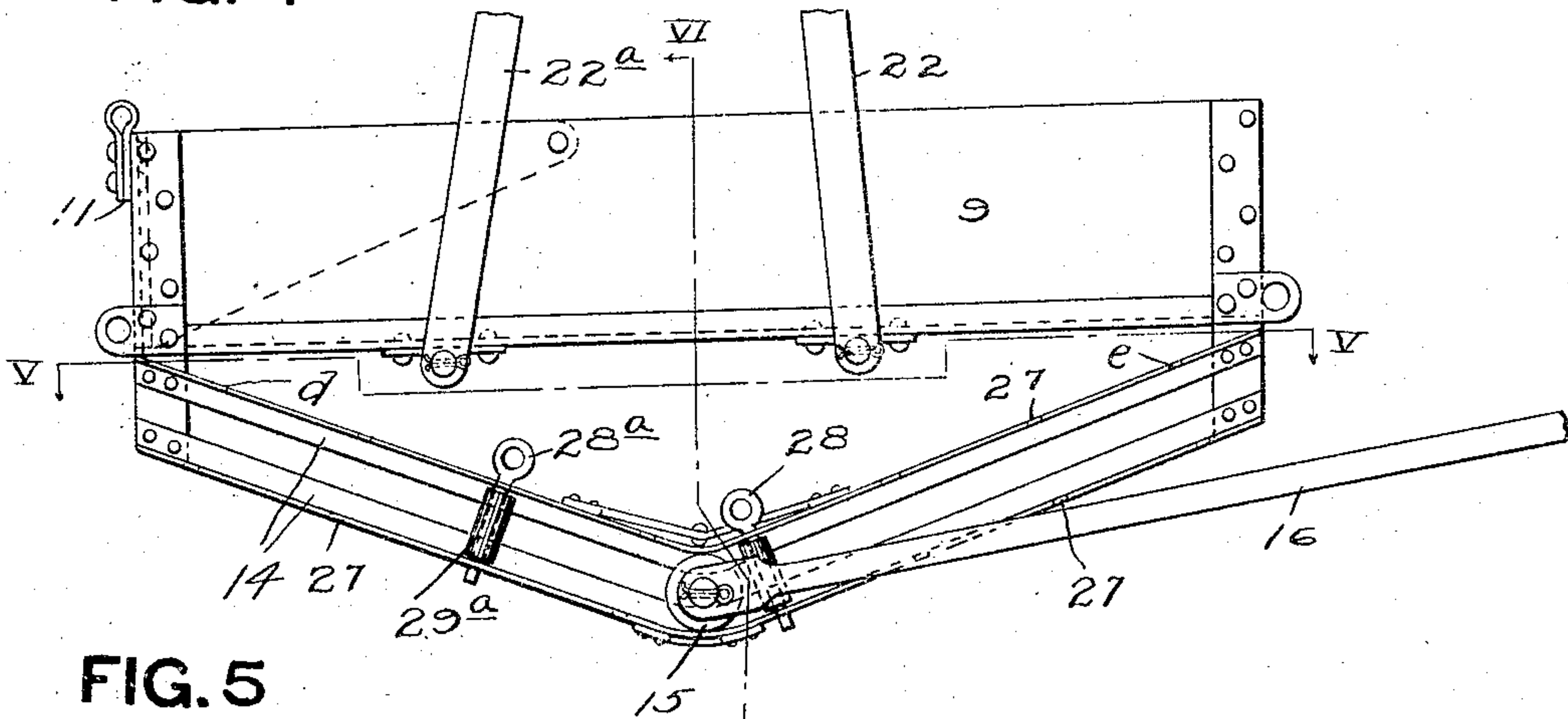


FIG. 5

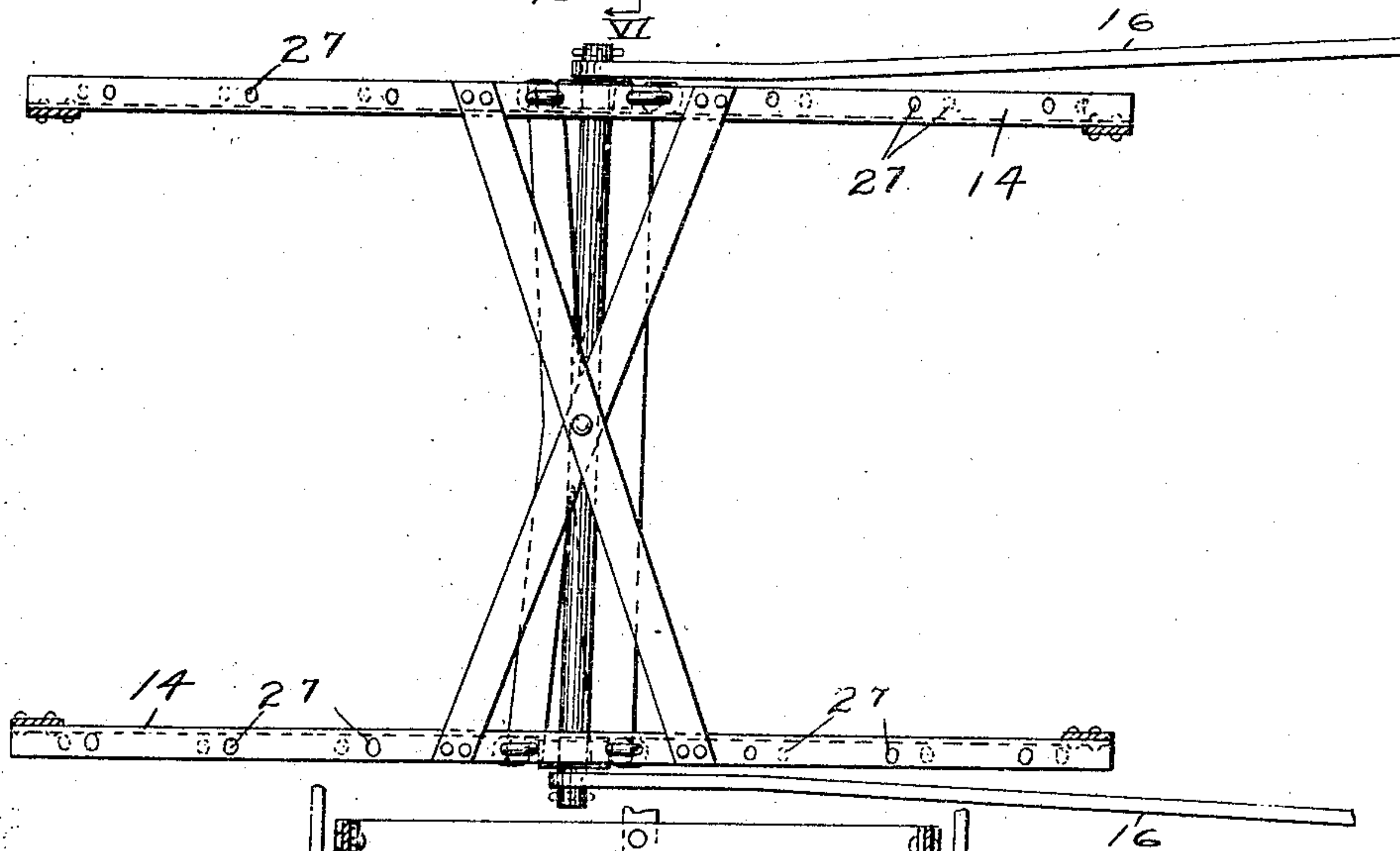
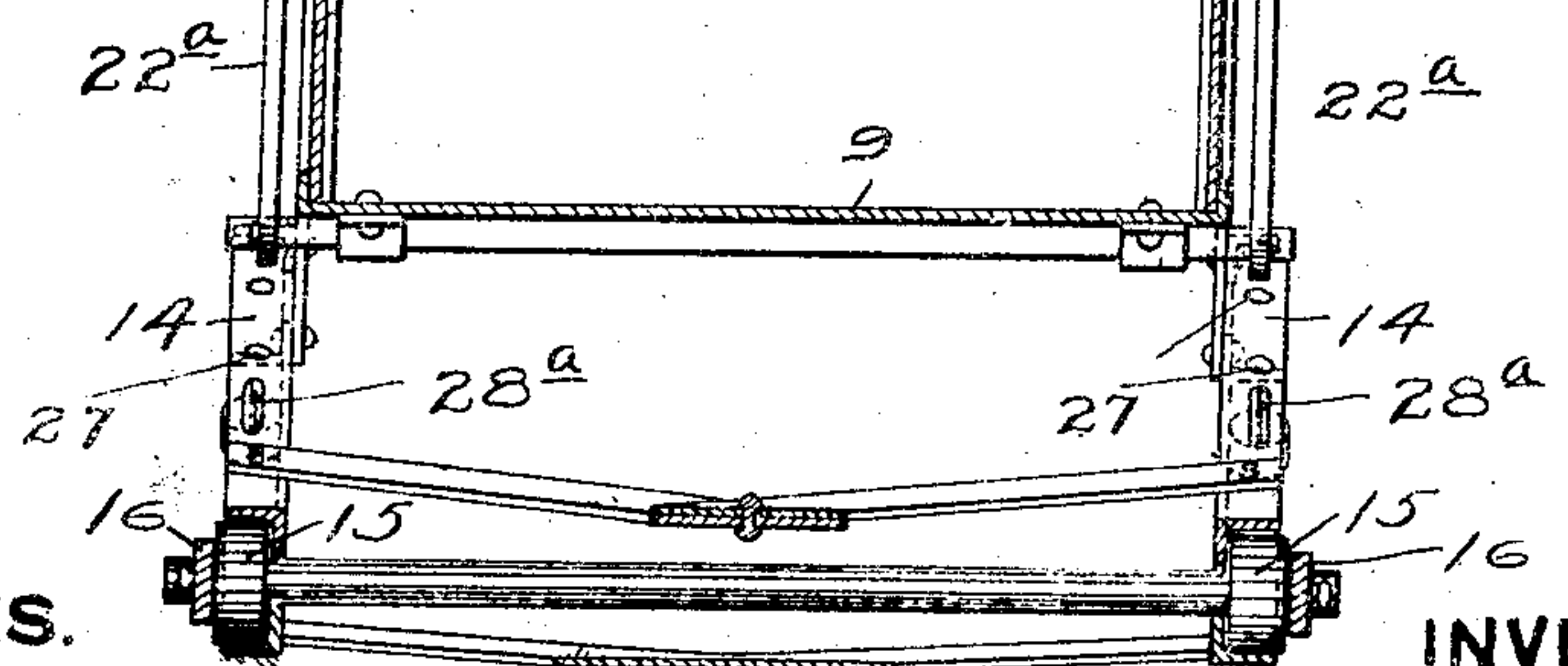


FIG. 6



WITNESSES.

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UNITED STATES PATENT OFFICE.

THOMAS WATKINS, OF WILSON, PENNSYLVANIA

DUMPING-PAN.

No. 896,961.

Specification of Letters Patent.

Patented Aug. 25, 1908.

Application filed September 23, 1907. Serial No. 394,115.

To all whom it may concern:

Be it known that I, THOMAS WATKINS, of Wilson, in the county of Allegheny, State of Pennsylvania, have invented a new and useful Improvement in Dumping Devices, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1 is a side elevation partly in section showing the receiving pan in its normal position; Fig. 2 is a like view showing the pan lowered and in its forward dumping position; Fig. 3 is a like view showing the pan in its rear dumping position; Fig. 4 is a side elevation of the pan; Fig. 5 is a sectional plan view on the line V—V of Fig. 4; Fig. 6 is a vertical transverse section on the line VI—VI of Fig. 4.

My invention relates to an improvement in dumping devices which may be employed for the purpose of dumping coal, ore or other material, and it is especially applicable for the purpose of loading barges or other vessels, although I do not desire to limit its use to this or to any other purpose.

Heretofore in tipples, ordinarily used in dumping coal into coal barges, as distinguished from traveling buckets, it has often been necessary to change the location of the barge in order to bring the load to a proper position athwartship, the tipple being so constructed as to dump at but one or two points. As the craft employed in carrying coal are of various widths, ranging from sixteen to twenty feet, and as it is necessary to distribute the load at desired points in the barge, the need of a tipple capable of such distribution has long been felt in the art.

The object of my invention is to provide a dumping device of the ordinary type, having a tilting-pan capable of adjustment to dump at any desired point athwartship of the craft which is being loaded, and in appliances for causing such adjustment and for operating the tilting-pan.

I will now describe my invention so that others skilled in the art may manufacture and use the same.

In the drawing 2 represents the vertical frame of a coal tipple, 3, 3^a the horizontal arms or supporting beams, and 4, 4^a the chute which delivers the coal to the tilting-pan. Journaled in suitable bearings on the arms or beams 3, are the drums 5 and 5^a, provided with gear-wheels 6 and 6^a which

mesh with each other. On the drum 5 are wound lines 7, provided at their lower ends with chains 8 which are connected to the rear lower corners of the tilting-pan 9. Wound on the drum 5^a are lines 7^a which pass over guide sheaves 10 and are provided at their lower ends with chains 8^a which are connected to the forward lower corners of the pan 9. This tilting-pan 9, at its forward end is provided with a swinging door 11 which is so pivoted to the pan as to be opened when the end of the pan is tilted in dumping the coal, the door being provided with a line 12 extending over the sheave 13 and extending to the spools 5' on the rollers 5 on which it is wound.

Secured to the bottom of the pan 9, at each side thereof, is a V-shaped guideway 14, which may be formed of angle bars. Traveling in the ways 14 are rollers or wheels 15 which are journaled in the end of the rods or bars 16, the other ends of which are pivoted to the sliding weights 17 which are fitted to slide on the vertical rods 18 secured to the frame or standard 2. These weights are provided with lines 19 wound on the smaller diameter of the drum 20 which is journaled in suitable bearings on the horizontal arm or beam 3^a. Pivoted to the bottom of the pan 9, at each side thereof, are bails b, which are composed of two or more lower upwardly extending arms 22 and 22^a, which are pivoted to two upwardly extending arms 23 and 23^a, the outer or upper ends of which are pivoted to each other. Pivoted to the joints between the arms 22 and 23 and 22^a and 23^a are the cross arms 24. Secured to the bails b at the upper ends of their extension rods 25^a are the lines 25 which are wound on the larger diameter of the drum 20. The lower portion 4^a of the chute is supported from the arms 3 by the rods 26. In the flanges of the angle bars of the way 14 are holes 27 through which the pins 28 are adapted to pass. These pins may be provided with rubber or leather sleeves 29. These holes may be arranged at suitable equal distances from the apex of the way 14 and serve as fulcrums for the rods or bars 16 during the dumping operation.

The operation is as follows: The pan 9 having been brought to its normal position, shown in Fig. 1, the coal or other material is allowed to run down the chute 4, 4^a into the pan. When the pan is full and it is desired to dump the coal or other material forwardly

into the barge *c* or other receptacle, the drum 20 is caused to rotate in the direction to pay out the lines 25 and 19, causing the pan 9 to be lowered to the desired horizontal position 5 above the barge *c*. If the lengths of the chains 8 and 8^a have not been previously adjusted, the drums 5 and 5^a may then be caused to rotate in the direction opposite to that indicated by the arrows shown in Fig. 2, 10 which pays out the lines 7^a and winds in the lines 7, thus lowering the forward end of the pan 9 and elevating the rear end which opens the door 11 and allows the coal or other material to be dumped at the point determined 15 by the combined action of the wheels 15 on the ends of the bars 16 and the bails *b*: for, as the forward end of the pan 9 is lowered the arms 22^a and 23^a are straightened to a vertical position, forming a support at a point 20 outside of the middle of the pan, and, as the sheave 10 and the drum 5 are further apart than the length of the pan, the pull of the line 7 on the pan is away from the side of the barge, but, as the wheels 15 bear against 25 the pins 28^a, any movement of the pan away from the side of the craft is prevented and the coal or other material is dumped at the port side of the barge. When it is desired to dump the coal amidship, the pin 28^a is moved 30 to the holes at *d* in Fig. 2, which allows the forward end of the pan 9 to be drawn back to the wheel 15, which, owing to the shape of the guide ways 14, will assume a lower position directly amidship. By placing the fulcrum pin 28^a at intermediate holes the point 35 of deposit may be varied according to the width of the craft. When it is desired to deposit the coal at the starboard side of the barge, dumping the coal from the rear end of the pan 9, the drums 5 and 5^a are rotated in a 40 reverse direction, as shown by the arrows in Fig. 3, which lowers the rear end of the pan and raises the front end, the arms 22 and 23 being brought to substantially a vertical position and forming the support, and the pin 45 28 acts as a fulcrum with the wheel 15 and prevents the pan being pulled forward by the line 7^a. By shifting the pin to the hole at *e* the pan may be caused to deposit its load 50 amidship, and using intermediate holes the point of deposit may be varied accordingly. As the chute 4, 4^a throws the coal or other

material forward, no door is needed at the rear end of the pan 9.

The advantages of my invention, which 55 are derived from the appliances for determining the point of deposit and causing certainty of action of the tilting pan, will be appreciated by those skilled in the art.

Although my invention is applicable to 60 coal tipples for loading coal on coal barges, I do not desire to limit it to this use or to the specific devices shown in the drawings.

What I claim and desire to secure by Letters Patent is:

1. In a dumping apparatus, a tilting pan having a shiftable line of suspension and an adjustable connection with a shiftable resisting device, in combination with means for tilting the pan. 65 70

2. In dumping apparatus, a tilting pan having a guideway, adjustable stops arranged in the guideway, an arm adapted to travel in the guideway and having a connection with a rigid support, in combination with devices 75 for tilting the pan.

3. In dumping apparatus, a tilting pan having a guideway, an arm pivotally connected with a rigid support and adapted to travel in the guideway, in combination with 80 devices for tilting the pan.

4. In dumping apparatus, a tilting pan having multiple guideways, an arm adapted to travel therein, a rigid support to which the arm is pivoted, and adjustable stops against 85 which the arm is adapted to bear, in combination with devices for tilting the pan.

5. In dumping apparatus, a tilting pan, devices for lowering and raising the pan, a guideway on the pan, a bar adapted to travel 90 in the guideway, a movable support for the other end of the bar, means for raising and lowering the support, and means for tilting the pan.

6. In dumping apparatus, a tilting pan having a V-shaped guideway, adjustable stops, a resisting device adapted to bear against the stops, and devices for tilting the pan. 95

In testimony whereof, I have hereunto set my hand.

THOMAS WATKINS.

Witnesses:

JAMES K. BAKEWELL,
C. E. EGGERS.