

W. H. HASKINS.
DISH WASHING DEVICE.
APPLICATION FILED MAR. 19, 1910.

990,047.

Patented Apr. 18, 1911.

3 SHEETS—SHEET 1.

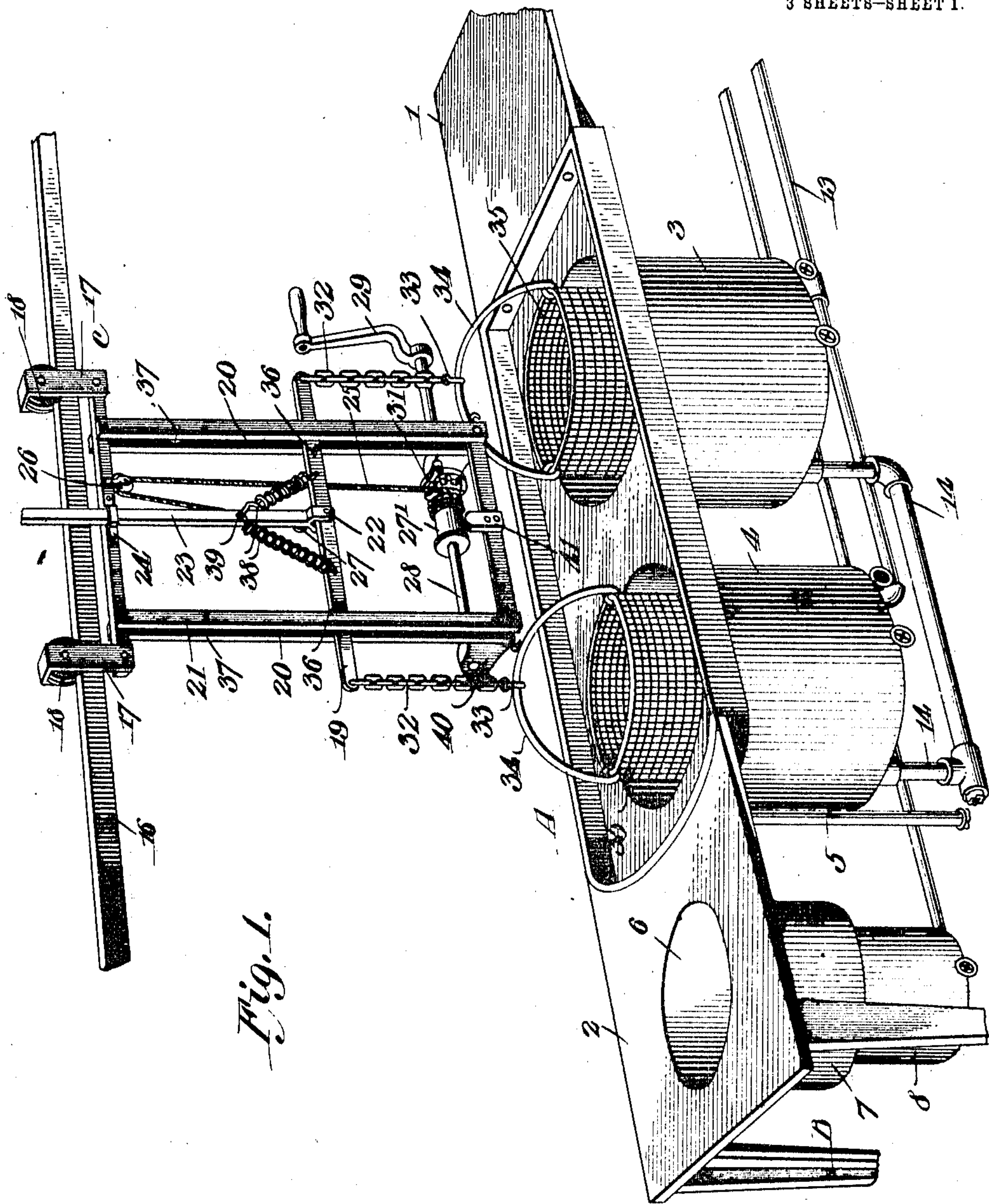


Fig. 1.

Witnesses

A. D. Galt.
C. Bradway.

Inventor
William H. Haskins.

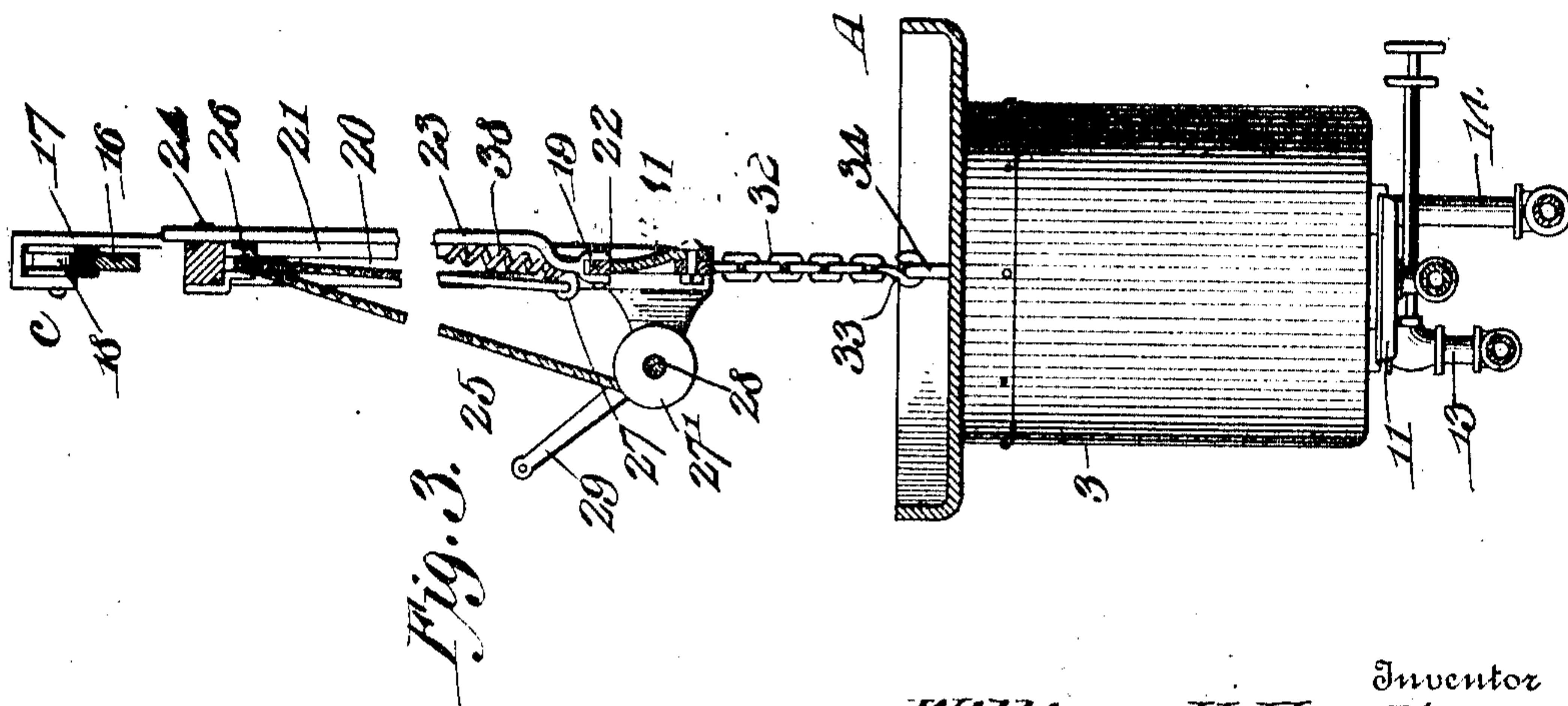
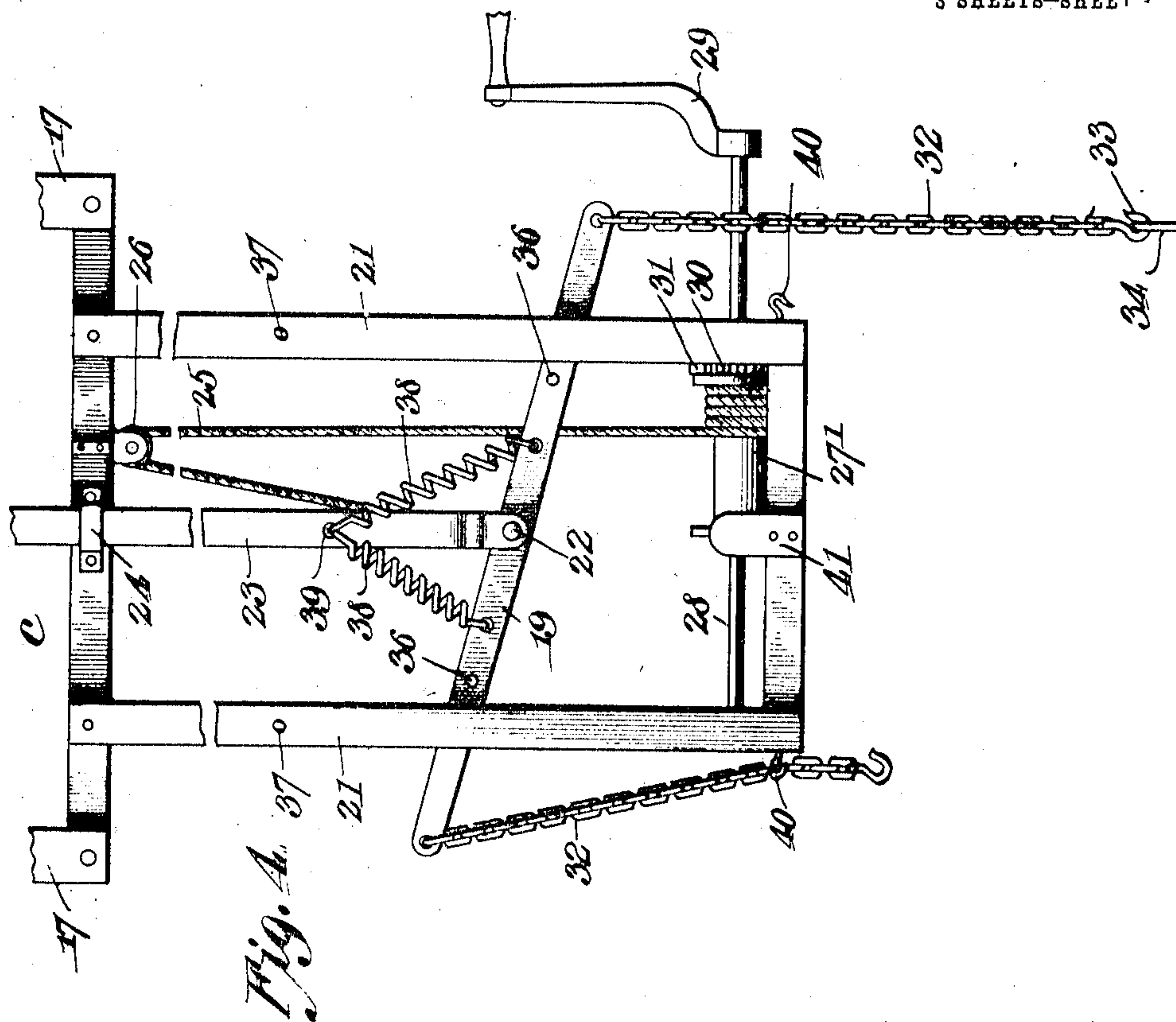
By Victor J. Evans.
Attorney

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3 SHEETS—SHEET 2



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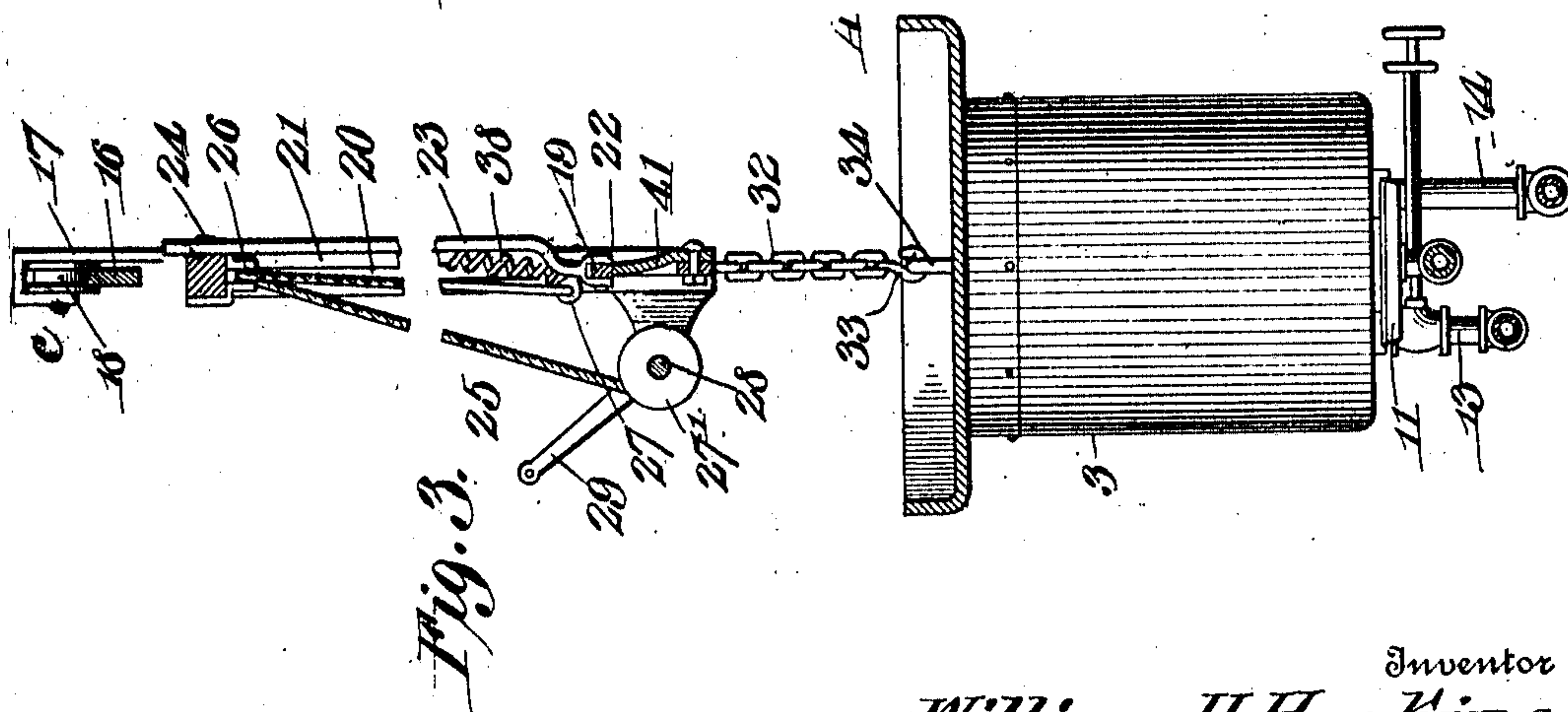
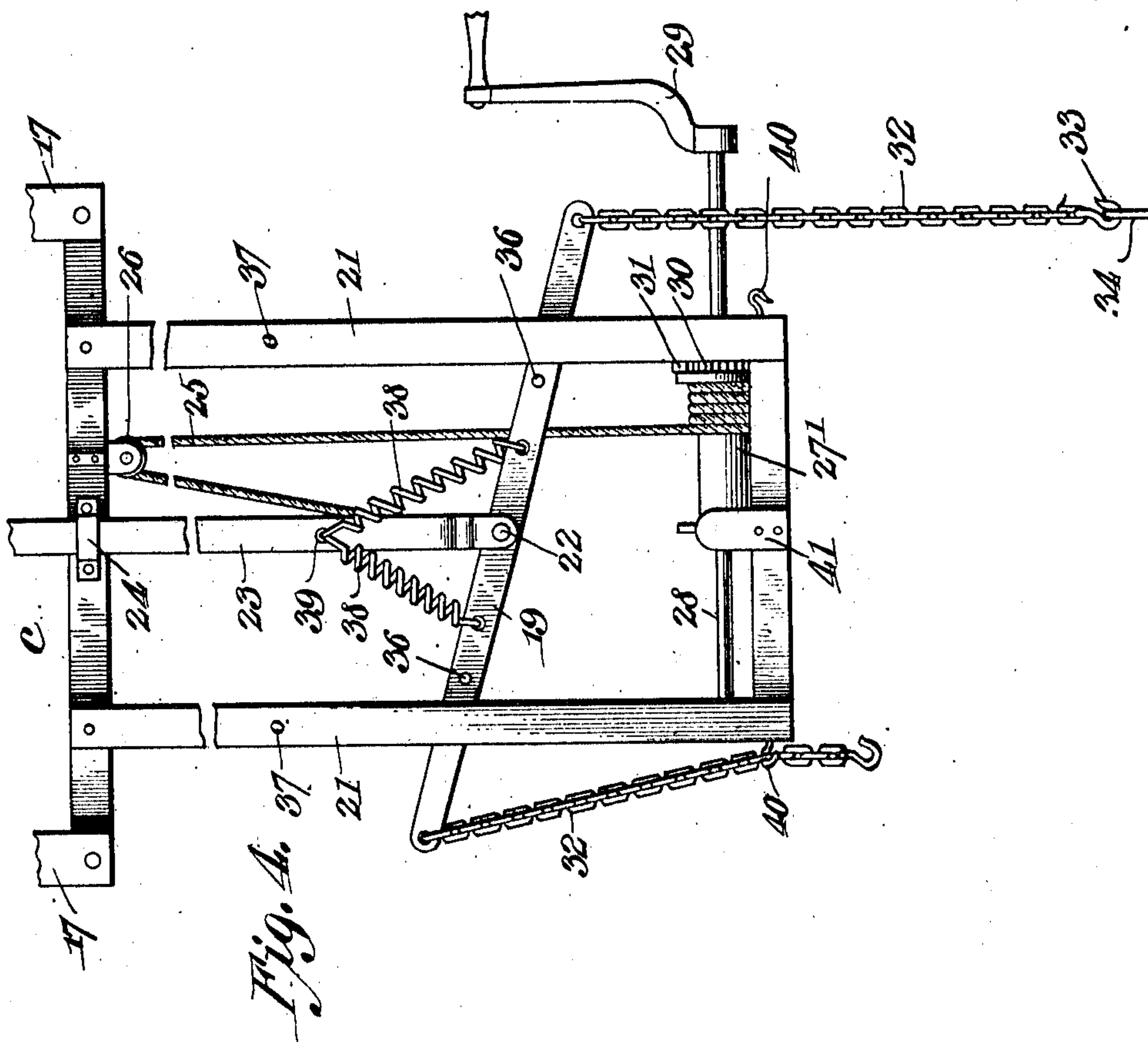
A. D. Galt
C. B. Bradway

Inventor
William H. Haskins.

By *Victor J. Evans.*
Attorney

990,047.

3 SHEETS—SHEET 3.



Witnesses

A. D. Galh.
C. R. Bradway.

Inventor

William H. Haskins.

ဖိနပ် Victor J. Evans.

Attorney

UNITED STATES PATENT OFFICE.

WILLIAM HENRY HASKINS, OF SAN JOSE, CALIFORNIA.

DISH-WASHING DEVICE.

990,047.

Specification of Letters Patent.

Patented Apr. 18, 1911.

Application filed March 19, 1910. Serial No. 550,437.

To all whom it may concern:

Be it known that I, WILLIAM HENRY HASKINS, a citizen of the United States, residing at San Jose, in the county of Santa Clara and State of California, have invented new and useful Improvements in Dish-Washing Devices, of which the following is a specification.

This invention relates to a dish washing machine of that type in which two dish-containing baskets are suspended in balanced relation in a washing and a rinsing tank, respectively in such manner that the operator can work the baskets alternately up and down in the tanks so as to simultaneously wash and rinse the dishes in the separate baskets.

The invention has for one of its objects to improve and simplify the construction and operation of machines of this character so as to be comparatively simple and inexpensive to manufacture and keep in operative condition, so as to be reliable and efficient in use, and of such design that the various operations can be carried on with great ease and despatch.

Another object of the invention is the provision of a balance lever adapted to suspend at opposite ends of the dish containing baskets, the lever being mounted on a traveling carriage movable on an overhead rail above the combined tank sink and drier and on which carriage the lever is movable vertically to different positions so that the baskets can be lowered in or raised out of the tanks and transferred from one tank to the other and from the rinsing tank to the drier in an extremely simple and efficient manner.

With these objects in view and others as will appear as the description proceeds, the invention comprises the various novel features of construction and arrangement of parts which will be more fully described hereinafter and set forth with particularity in the claims appended hereto.

In the accompanying drawings, which illustrate one embodiment of the invention; Figure 1 is a perspective view of the apparatus. Fig. 2 is a vertical longitudinal section thereof. Fig. 3 is a vertical transverse section of the apparatus. Fig. 4 is a front view of the basket suspending and

carrying device, showing the lever suspending only one basket.

Similar reference characters are employed to designate corresponding parts throughout the several views.

Referring to the drawings, A designates a sink of any improved construction which has at one end a receiving table 1, and at the opposite end a discharge table 2, and under the sink are washing and rinsing tanks 3 and 4, disposed side by side, each tank being open at the top and preferably forming a part of the sink so that overflow water from the tanks will be collected in the sink from which it can drain through the drain-pipe 5. The discharge table 2 is provided with a drier B, so that a basket of rinsed dishes can be set over the opening 6 of the table 2 and dried by the heated air which ascends from the drier. This drier B consists of upper and lower drums 7 and 8, the upper drum being slightly larger than the lower and into which the latter extends. Supported over the upper end of the lower drum or cylinder is a hood 9, which serves as a deflector for the heated air and as a shed for preventing the dripping water from the dishes from dropping on the burner 10. The water in the tanks 3 and 4 is kept hot by heaters 11 and 12, and each tank has a hot water supply pipe 13 and a drain pipe 14. Within each tank may be arranged a stool-like support 15 on which the dish-containing basket can rest in the tank.

Supported over the sink A is an overhead rail 16, on which is mounted a traveling carriage C, the same being in the form of a rectangular frame provided with hangers 17 on its upper ends, which hangers have rollers 18, that ride on the rail. This carriage C supports a basket suspending device which, in the present instance, is in the form of a balance lever 19, which has its extremities disposed in vertical guide ways 20 in the side members 21 of the carriage frame. This lever is fulcrumed at 22, on a vertically disposed rod 23, that slides vertically in a guide 24, at the top of the carriage frame. The lever and rod 23 are supported by a flexible element or cable 25, which passes over a pulley 26 at the top of the carriage frame and connects at 27 with the lower end of the rod 23, the flexible element being adapted to

wind around a drum 27' on a horizontal shaft 28, journaled on the carriage frame at the bottom thereof. The shaft 28 has an operating crank 29, whereby the drum 27' can be turned. To prevent the drum from turning in one direction, a ratchet wheel 30 is secured thereto and with which coöperates a pawl 31, mounted on the carriage frame. The ends of the lever have depending chains 32, that carry hooks 33 to engage the bails 34 of the dish containing baskets 35. The balance lever 19 is prevented from having too great a play laterally by stops 36 arranged to engage the side members 21 on the carriage frame. On the members 21 are rollers 37, which serve as stops for limiting the upward movement of the lever and on these rollers, the lever will have a limited longitudinal movement whenever the lever ascends while in a tilted position, when the dishes in one basket are heavier than those in the other basket, until the lever is horizontal. In order to assist in maintaining the lever approximately horizontal and to render the oscillation of the lever easier, springs 38 are connected with the lever at opposite sides of the fulcrum 22 and both springs are connected at 39 with the vertical bar 23. At the lower corners of the carriage C are hooks 40 with which either chain can be engaged when lifting a basket out of either tank by the turning of the crank, this being necessary when only one basket of dishes is suspended on the lever.

In practice, a basket of dishes is placed in the tank 3 that has a washing fluid and allowed to remain therein during the packing of the second basket, and when the latter is to be placed in the washing tank, the operator attaches the right-hand chain to the bail of the basket in the washing tank and with left hand on bottom cross bar of frame C to steady it, he turns the crank with the other hand so as to wind the cable 24 on the drum 27 until the springs are tense and the basket begins to rise. The crank is then released and the left hand grips the left chain while the lower end of the right hand chain and bail of the basket are gripped with right hand and both arms are used for oscillating the lever to work the basket up and down in the washing tank. After the washing is completed the left-hand chain is fastened to the left-hand hook 40 so that the basket can be raised completely out of the washing tank by the turning of the crank. The pawl will hold the basket suspended and then the carriage is moved to the left for transferring the basket holding the washed dishes to the rinsing tank 4. When the basket is over this tank, the pawl is released and the basket gradually lowered into the rinsing tank. When the basket strikes the stool in tank the chains are at once released from the basket and hook and with left hand on left

chain the carriage is moved to the right, and the left chain is engaged with the basket in the rinsing tank at the same time. The second basket is placed in the washing tank and engages hook on chain as it descends the balance lever already resting on the abutment 41. After this is done, the crank is turned to raise the lever a suitable distance so that the baskets will be free from the stools or supports in the tank, and while the pawl holds the basket suspended, the operator oscillates the lever to simultaneously work the baskets up and down in the tanks. When the washing and rinsing operation is completed, the crank is again turned to raise the lever to its full height where the baskets will be above the sink. The carriage with the baskets suspended thereon is moved to the left until the left and right baskets are over the drier B and left or rinsing tank respectively. The pawl is now released and the crank reversed to permit the baskets to lower, one upon the discharge table over the drier, and the other into the rinsing tank. The chains are now released from the baskets and the carriage returns to initial position so that the second and third basket of dishes can be rinsed and washed in the same manner, while the rinsed dishes in the first baskets are being dried by the heat from the drier B.

On the bottom of the carriage frame is an abutment 41, which limits the downward movement of the lever so that the lever can tilt sufficiently to permit the chains to be attached to or removed from the bails of the baskets when the latter are resting on supports 15 in the tanks, and also gives room for the hand to rest on lower cross bar while the other manipulates the crank.

With an apparatus of this character, the washing can be carried on very rapidly and with great ease and furthermore, there is economy in the use of water since the dishes are thoroughly washed in the washing tank and cleansed before being placed in the rinsing tank and it will be noted that the baskets of dishes are suspended in the upper part of the tank so that the water is not agitated sufficiently to stir the settlings in the bottom and for this reason no food will be carried with the dishes into the rinsing tank.

From the foregoing description taken in connection with the accompanying drawings, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention relates, and while I have described the principle of operation of the invention, together with the device which I now consider to be the best embodiment thereof, I desire to have it understood that the device shown is merely illustrative and that such changes may be made when desired as are within the scope of the invention.

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

1. The combination of a frame having spaced vertically-disposed guideways, a lever 5 arranged with its ends in the guideways, a movable support on the frame on which the lever is fulcrumed, means on the frame for raising and lowering the support, roller stops arranged at the upper ends of the 10 guideways to be engaged by the lever on its upward movement with the support, and means on the ends of the lever for supporting dish holders.

2. The combination of a frame having 15 spaced vertically-disposed guideways, a lever arranged with its ends in the guideways, a movable support on the frame on which the lever is fulcrumed, means on the frame for raising and lowering the support, roller 20 stops arranged at the upper ends of the guideways to be engaged by the lever on its upward movement with the support, means on the ends of the levers for supporting dish holders, and means on the bottom of the 25 frame for limiting the downward movement of the lever and its support.

3. In a dish washing machine, the combination of spaced guideways, a movable support disposed between the guideways, an 30 oscillatory element pivoted on the support and movable in the guideways, a pair of helical extension springs arranged at an angle to each other with their upper ends connected with the support at a point above 35 the element and their lower ends connected with the element at opposite sides of the pivot thereof, and means arranged on the element at points outwardly from the guideways for supporting dish-holding baskets.

4. In a dish washing machine, the combination of spaced guideways, a movable support disposed between the guideways, an oscillatory element pivoted on the support and 40 movable in the guideways, a pair of helical extension springs arranged at an angle to each other with their upper ends connected with the support at a point above the element and their lower ends connected with 45 the element at opposite sides of the pivot thereof, means arranged on the element at points outwardly from the guideways for supporting dish-holding baskets, and stops at the upper ends of the guideways with 50 which the element engages at the limit of the upward movement of the support.

5. In a dish washing machine, the combination of a frame having vertically-disposed guideways, a lever extending across 55 the frame with its ends passing through the guideways transversely, a movable support on the frame, means on the frame and on which the lever is fulcrumed and connected with the support for raising and lowering the latter, flexible basket-carrying elements 60 on the ends of the lever, and separate means

on the frame for permitting either element to be fastened thereto while the other element sustains a load during the raising of the lever.

6. In a dish washing machine, the combination of a frame, a vertically movable element on the frame, a lever fulcrumed on the element, a shaft mounted on the frame at the bottom thereof, a drum on the shaft, a guide 70 on the upper end of the frame, a flexible element having one end connected with the said vertically movable element and the other end connected with the drum, said flexible element passing around the guide, stops on the frame arranged to be engaged 75 by the lever for causing the latter to assume a horizontal position at the end of its upper movement, a stop on the lower end of the frame for limiting the downward movement of the lever, and springs between the lever 80 and the said vertical movable element tending to hold the lever in a horizontal position.

7. A dish washing apparatus comprising a basket suspending lever, means for bodily raising and lowering the lever, and spring 85 acting on the lever tending to maintain the same horizontal.

8. A dish washing apparatus comprising a frame having parallel guideways, a lever extending through the guideways and projecting beyond the same, means for supporting 90 dish holding baskets on the projecting portions of the lever, means for fulcruming the lever between the guideways, and elastic devices attached to said fulcruming means and acting on the lever at opposite 95 sides of the fulcrum thereof.

9. A dish washing apparatus comprising spaced guideways, a bodily movable lever having its fulcrum disposed between the 100 guideways and its ends movable in the latter, means for suspending dish holding devices on the ends of the lever, and means connected with the middle of the lever for moving the latter along the guideways to 105 carry the dish holding devices to and from washing position.

10. A dish washing apparatus comprising a frame having guideways, a lever extending transversely to the guideways with its ends 110 movable in the latter, a rod disposed between and movable longitudinally of the guideways and on which the lever is fulcrumed, extension springs connected with the rod and with the lever at opposite sides 115 of the fulcrum thereof, means for supporting separate baskets on opposite sides of the fulcrum of the lever, and means for raising and lowering the lever and rod.

11. A dish washing apparatus comprising 120 a frame having vertically disposed guideways, a lever having its ends movable in the guideways, a longitudinally movable rod supporting at its lower ends the lever, means on the frame for guiding the rod, yielding de- 125 130

vices between the rod and lever, a winding drum mounted on the frame, a flexible element connected with the bottom of the rod, a guide mounted on the frame above the lever and over which the element passes, and means for suspending dish-holding baskets on the lever.

12. A dish washing apparatus comprising a frame, a bodily movable lever guided on the frame, means for limiting the lateral movement of the lever, means for limiting the vertical movement of the lever, means for suspending dish holding baskets on the lever, and means for raising and lowering the lever to move the basket to and from washing position.

13. A dish washing apparatus comprising a supporting frame, a bodily movable lever mounted thereon, elements for suspending dish holding baskets on the lever, means for raising and lowering the lever, and means for holding either end of the lever down at one end while the other end raises a basket by the operation of the first mentioned means.

14. A dish washing apparatus comprising a supporting frame, a bodily movable lever mounted thereon, elements for suspending dish holding baskets on the lever, means for raising and lowering the lever, and means on the frame with which either element can be engaged when the dish basket is removed therefrom for causing the lever to move bodily by the operation of the first mentioned means.

15. A dish washing apparatus comprising a vertically movable support, an oscillatory element pivoted on the lower end of the support and projecting from opposite sides thereof, means for suspending separate dish holding devices therefrom, and means for

raising and lowering the support and element with one or more dish holding devices on the latter.

16. A dish washing apparatus comprising a vertically movable lever, a winding device, means for connecting the device with the middle of the lever for raising and lowering the same, means for suspending dish holders on the lever, and means for holding one end of the lever fixed while the other end moves to carry a dish holder.

17. A dish washing apparatus comprising separate tanks, a movable carriage disposed over the tanks, and a vertically movable and oscillatory means movable with and mounted wholly on the carriage for supporting separate dish holding devices to move simultaneously into or out of the tanks and to reciprocate therein during the washing operation.

18. A dish washing apparatus comprising separate rinsing and washing tanks, a drier adjacent the rinsing tank, a carriage movable over the tanks and drier, a lever movably mounted on the carriage, means for suspending dish holding baskets on the lever, means mounted on and movable with the carriage and connected with the lever for moving the latter for simultaneously moving the baskets into and out of the tanks or one of the baskets into the rinsing tank while lowering the other to the drier, and means whereby one end of the lever can be held stationary while the other end is raised to remove a basket from a tank.

In testimony whereof I affix my signature in presence of two witnesses.

WM. HENRY HASKINS.

Witnesses:

F. I. BRIGDEN,
W. M. COOPER.