

No. 744,443.

PATENTED NOV. 17, 1903.

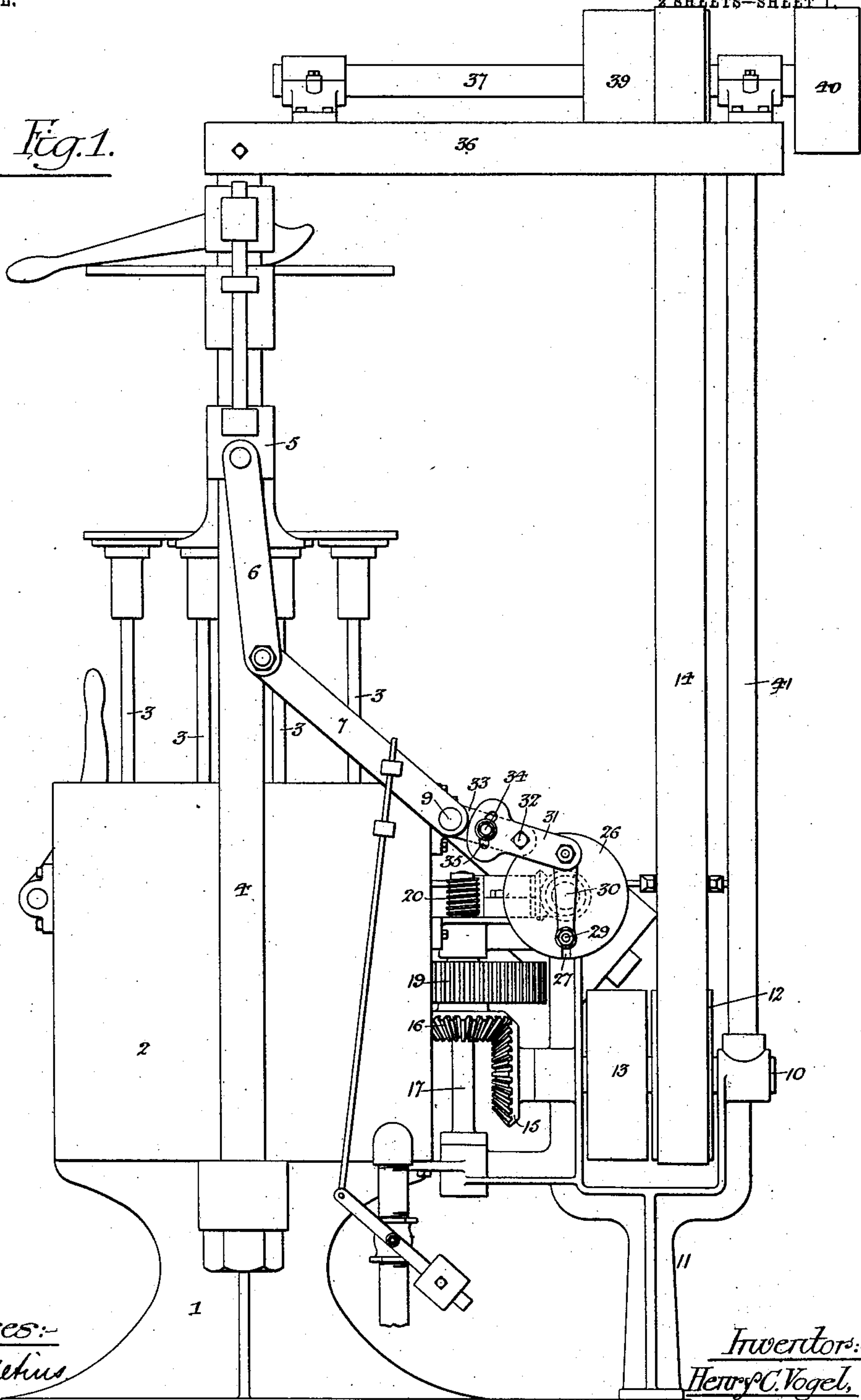
H. C. VOGEL.  
BOTTLE WASHING MACHINE.

APPLICATION FILED APR. 26, 1902.

NO MODEL.

2 SHEETS-SHEET 1.

*Fig. 1.*



*Witnesses:-*

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*Titus H. Grous*

*Inventor:-*

*Henry C. Vogel,*

*by this Attorneys:*

*Howson & Howson*

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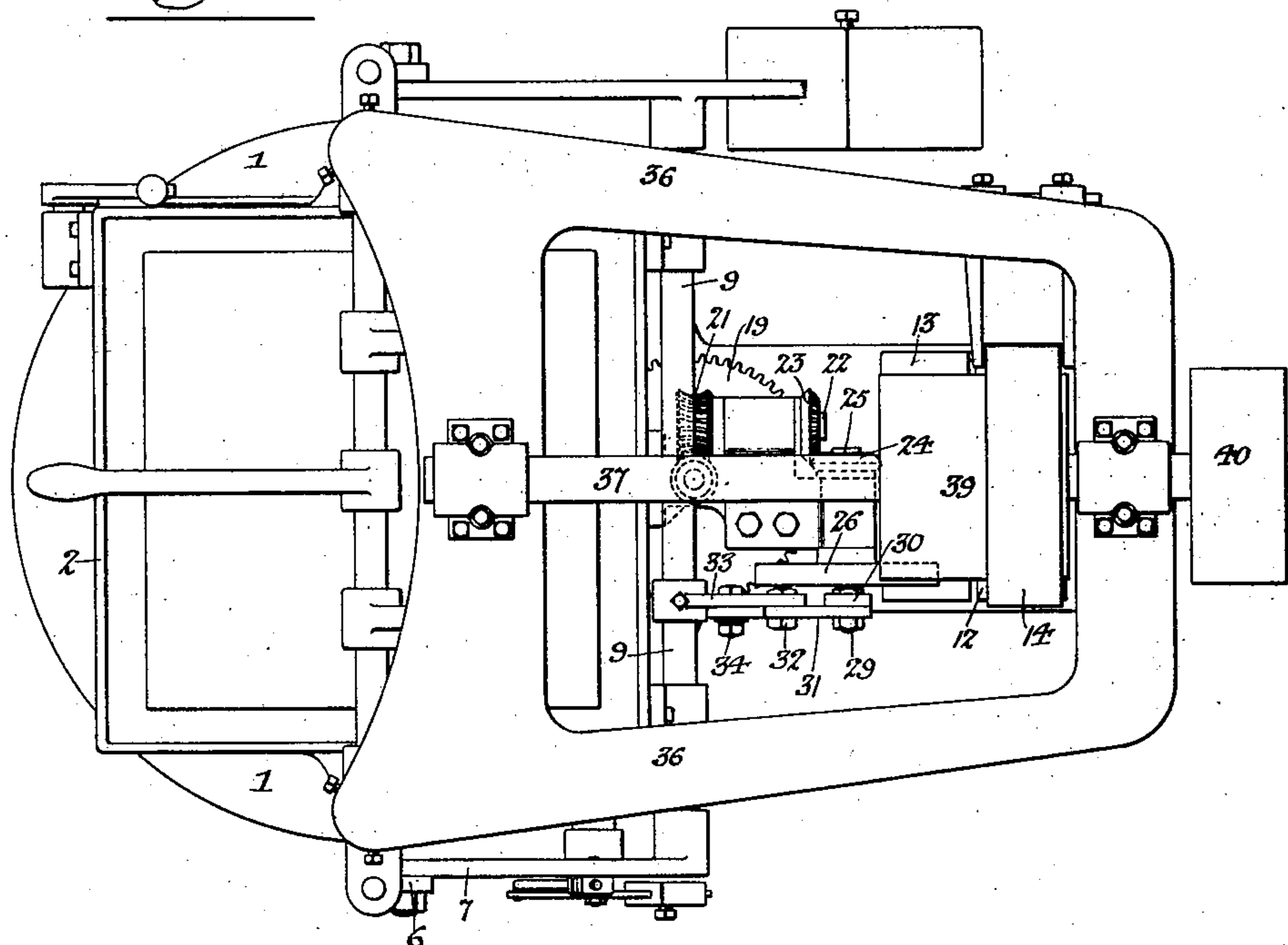
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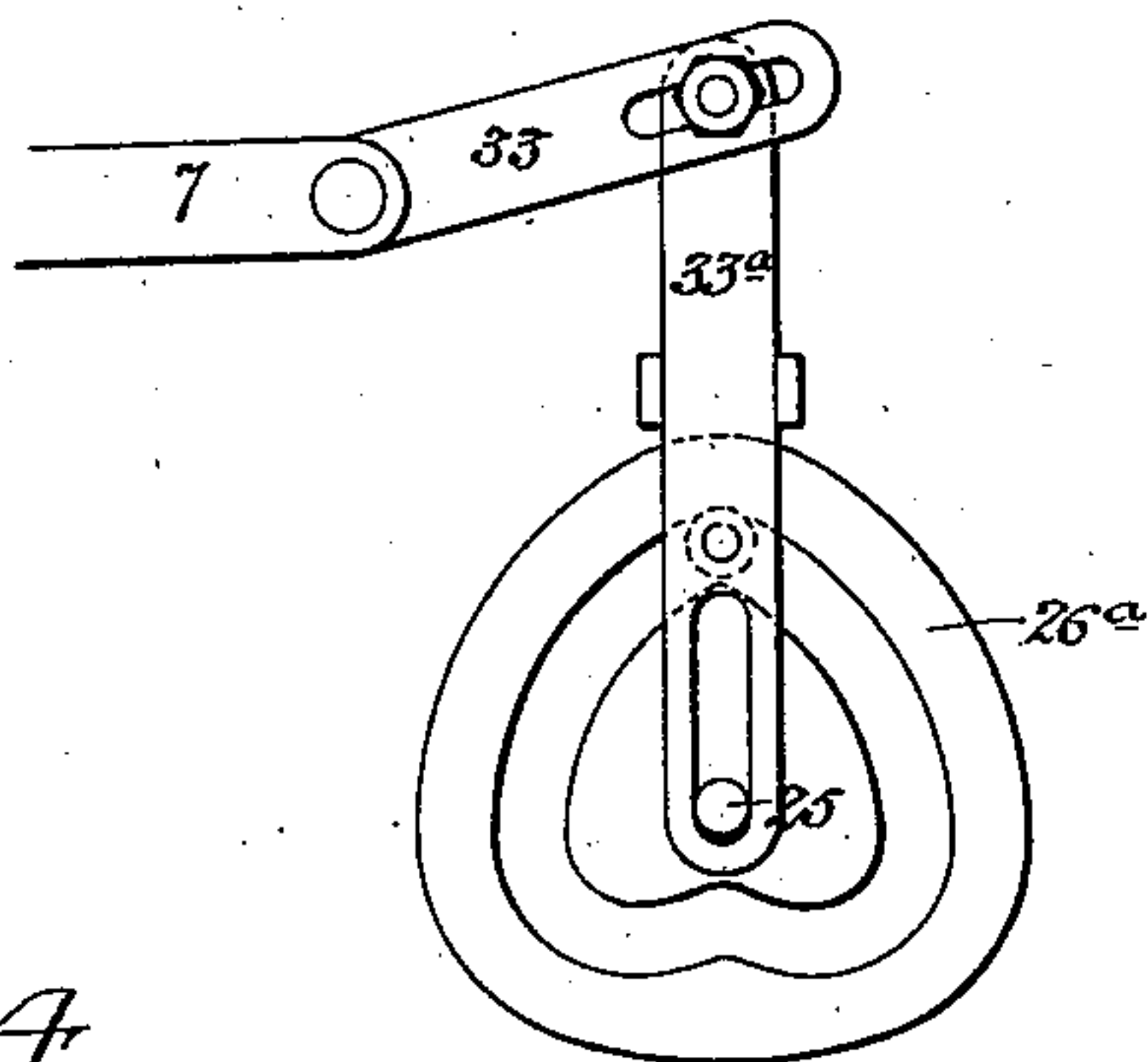
NO MODEL.

2 SHEETS—SHEET 2.

*Fig. 2.*



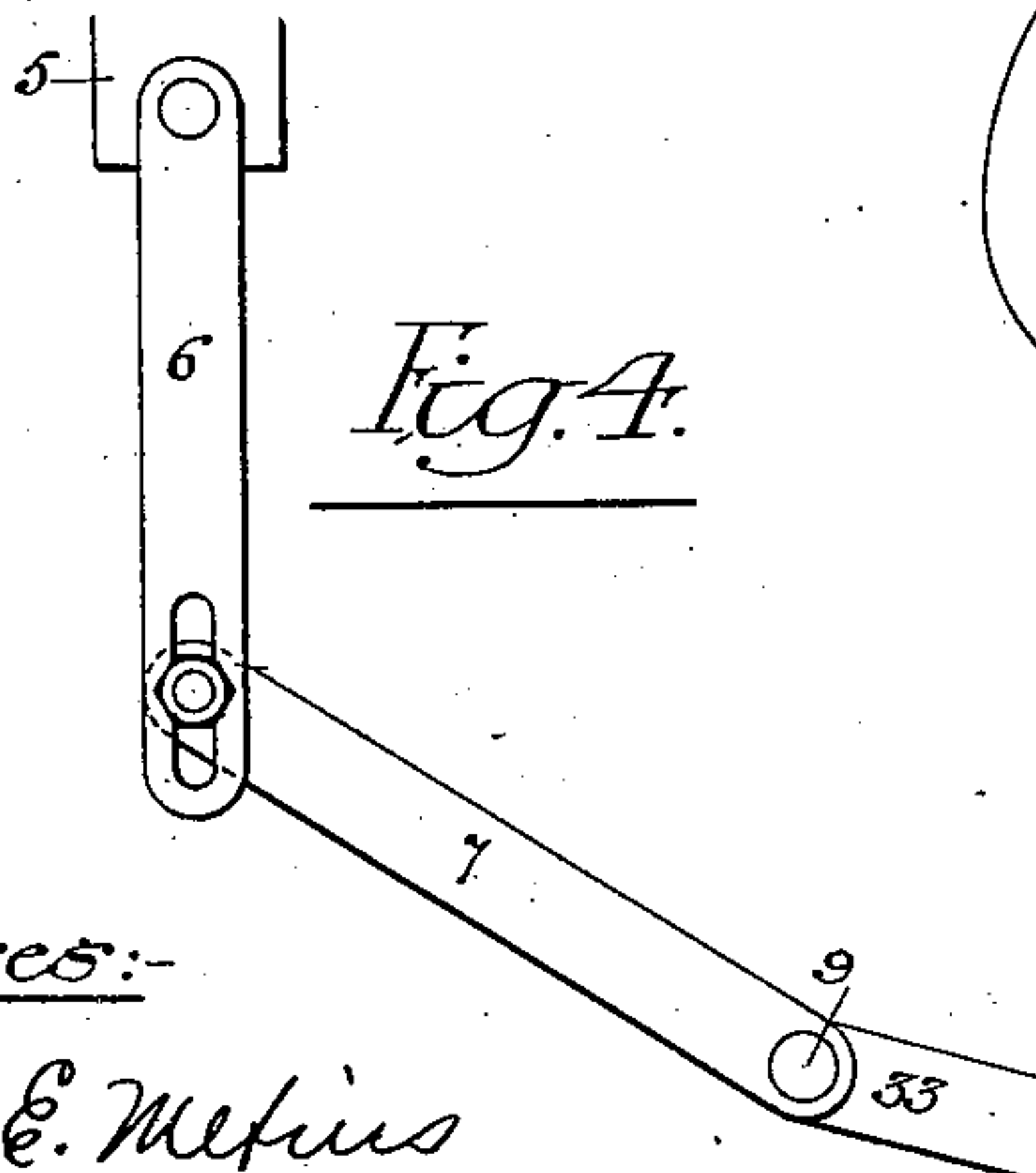
*Fig. 3.*



*Fig. 5.*



*Fig. 4.*



Witnesses:-

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# UNITED STATES PATENT OFFICE.

HENRY C. VOGEL, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO S. S. WENZELL MACHINE COMPANY, OF CHARLESTON, WEST VIRGINIA, A CORPORATION OF WEST VIRGINIA.

## BOTTLE-WASHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 744,443, dated November 17, 1903.

Application filed April 26, 1902. Serial No. 104,780. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY C. VOGEL, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Bottle-Washing Machines, of which the following is a specification.

My invention consists of certain improvements in the bottle-washing machine shown in the patent of Otto Eick, No. 487,999, dated December 13, 1892, one object of my invention being to provide means whereby the bottle-carrying frame may be automatically reciprocated and one attendant thereby enabled to care for a number of machines, a further object being to permit the machine to be driven effectively from a line-shaft in the room or apartment in which it is situated. These objects I attain in the manner hereinafter set forth, reference being had to the accompanying drawings, in which—

Figure 1 is a side view of a bottle-washing machine of the character to which my invention relates, illustrating the application of my improvements thereto. Fig. 2 is a plan view of the same, and Figs. 3, 4, and 5 are views illustrating modifications of parts of the machine.

1 represents the pedestal for supporting the box 2, which contains the mechanism for rotating the brush-spindles 3, said pedestals also having vertical posts or columns 4, which guide the frame 5, upon which are mounted the bottles to be washed, the frame being connected by links 6 to an arm 7 on a rock-shaft 9, mounted in suitable bearings upon the box 2.

The driving-shaft 10 of the machine is adapted to bearings in a forked pedestal 11 and has fast and loose pulleys 12 and 13 for receiving the driving-belt 14, said shaft also having bevel-gears 15 and 16 for driving a vertical shaft 17, which has a spur-wheel 19, constituting the initial gear of the train which rotates the brush-spindles 3.

All of the parts thus far described are common to the Eick bottle-washing machine, before referred to; but in these machines as at present constructed the rock-shaft 9 is provided with a hand-lever to be manipulated by the attendant in order to impart the desired reciprocating movement to the bottle-carrying

frame 5, it being understood that in this type of machine the bottles are mounted mouth down upon the frame 5 and are moved up and down over the rotating brushes, which thus reach all parts of the interior of the bottles.

The ordinary machines require the services of one attendant for each machine, and one of the objects of my invention has been to provide means for effecting the automatic operation of the bottle-carrying frame, so that the services of the attendant are not required during the time that the bottles are being washed, but only for the purpose of introducing the bottles into and removing them from the machine. Hence one attendant is enabled to take care of a number of machines. This object I attain as follows: On the upright shaft 17 is a worm 20, which meshes with a worm-wheel 21 on a short horizontal shaft 22, the latter having a bevel-wheel 23, which meshes with a similar bevel-wheel 24 on a short horizontal shaft 25, disposed at right angles to the shaft 22, both of these shafts being adapted to suitable bearings in brackets carried by the upper end of the forked pedestal 11 and by the box 2 of the machine. Secured to the shaft 25 is a disk 26, having a radial slot 27 for the reception of a pin 29, which can be adjusted radially in the slot and secured in any desired position of adjustment, so that it constitutes a crank-pin with varying throw. Hung to this crank-pin is one end of a link 30, the other end of which is connected to one arm of a lever 31, pivoted by a bolt or pin 32 to an arm 33 on the rock-shaft 9, said arm 33 having a bolt 34, which passes through a segmental slot 35 in an enlarged portion of the lever 31 and is provided with a nut whereby the lever may be clamped to the arm in any of the different positions of adjustment permitted by the segmental slot 35.

The provision of the adjustable crank-pin 29 is on account of the different lengths of bottles on which the machine is intended to act; but as it is necessary that the brush shall always reach the bottom of the inverted bottle the latter must always descend to the same point irrespective of the length of the bottle and the consequent varying extent of reciprocating movement of the bottle-carry-



ing frame, hence the adjustable connection between the lever 31 and the arm 33, which permits of variation in the throw of the crank-pin 29 without any alteration in the position of the bottle-carrying frame when the latter is at the lowest point of its reciprocation, all change in extent of movement being at the upward end of the reciprocating movement of the frame.

Mounted upon the upper ends of the posts or columns 4 is a frame 36, which has bearings for a shaft 37 parallel with the shaft 10 and having two belt-pulleys 39 and 40, the pulley 39 being a broad pulley, which receives the belt 14, running down to the fast and loose pulleys 12 and 13 of the shaft 10, while the pulley 40 is intended to receive the driving-belt from the line-shaft in the room or apartment in which the machine is situated. Two short belts are thus employed instead of a single long belt, which is necessary when the machine is belted directly from the line-shaft onto the pulleys 12 and 13. Hence no shifting of the belt on the line-shaft is required, and the short belt 14 can be shifted more readily than the long belt. By this construction, moreover, the machine is freed from some of the restrictions as to the placing of the same in respect to the line-shaft to which it is subject when belted directly to the pulley on said shaft. For instance, the machine may now be driven by a belt having a partial turn between the pulley on the line-shaft and the pulley 40. Hence the location of the machine can be determined with reference to the light or to the convenience of the attendant and without such regard as heretofore to the location of the line-shaft.

The outer end of the platform 36 is preferably stayed by a rod or post 41, extending from the same to the outer bearing for the shaft 10, as shown in Fig. 1.

Other means than the crank-disk and the connections shown may be employed for imparting reciprocating movement to the bottle-carrying frame of the machine. For instance, a cam-disk 26<sup>a</sup>, acting upon a slide 33<sup>a</sup>, having slotted connection with the arm 33, might be employed, as shown in Fig. 3; but as this would necessitate the use of a separate cam-disk or a cam-disk having a different throw for each of the different lengths of bottle to be acted upon the use of the crank-disk with adjustable pin is preferred.

Other means than the slotted lever 31 may also be used for maintaining a uniform position of the bottle-carrying frame when it is at the lowest point in its reciprocation irrespective of the extent of such reciprocation. For instance, there may be a slotted connec-

tion between the arm 7 and link 6, as shown in Fig. 4, or said link may be made in two parts 6<sup>a</sup> 6<sup>b</sup>, with a slotted connection between them, as in Fig. 5, or either of the arms 7 or 33 may be secured to the shaft 9 by means of a set-screw, so that it can be readjusted thereon whenever there is any change in the position of the crank-pin 29 to vary the extent of reciprocation of the bottle-carrying frame.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. The combination of the bottle-carrying frame of the machine, the rotating shaft having thereon a disk with crank-pin adjustable on the disk so as to vary its throw, and a rock-shaft having two arms, one connected to the bottle-carrying frame and the other to the crank-pin, substantially as specified.

2. The combination of the bottle-carrying frame of the machine, the rotating shaft having thereon a disk with adjustable crank-pin, and an adjustable connection between said crank-pin and the bottle-carrying frame, whereby the extent of reciprocation of the latter may be varied, without changing the position of the frame when it is at the downward limit of its movement, substantially as specified.

3. The combination of the bottle-carrying frame of the machine, the rotating shaft having thereon a disk with adjustable crank-pin, a rock-shaft having two arms one connected to the bottle-carrying frame, a lever hung to the other arm of the rock-shaft, and connected to the crank-pin, and means for securing said lever in different positions of adjustment on the arm, substantially as specified.

4. A bottle-washing machine having a base with two upwardly-projecting arms thereon, one having bottle-washing machinery and being provided with two side members, a second and lower frame having a driving-shaft, pulleys on said shaft, a vertical strut projecting from said lower frame, a horizontal upper frame having one end in engagement with said strut and the other end engaging both of said side members of the main frame, a shaft mounted on the upper frame, pulleys thereon in line with those of the driving-shaft and a third pulley for receiving a driving-belt, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HENRY C. VOGEL.

Witnesses:

J. W. RITTER,  
EDWD. B. POTTS.