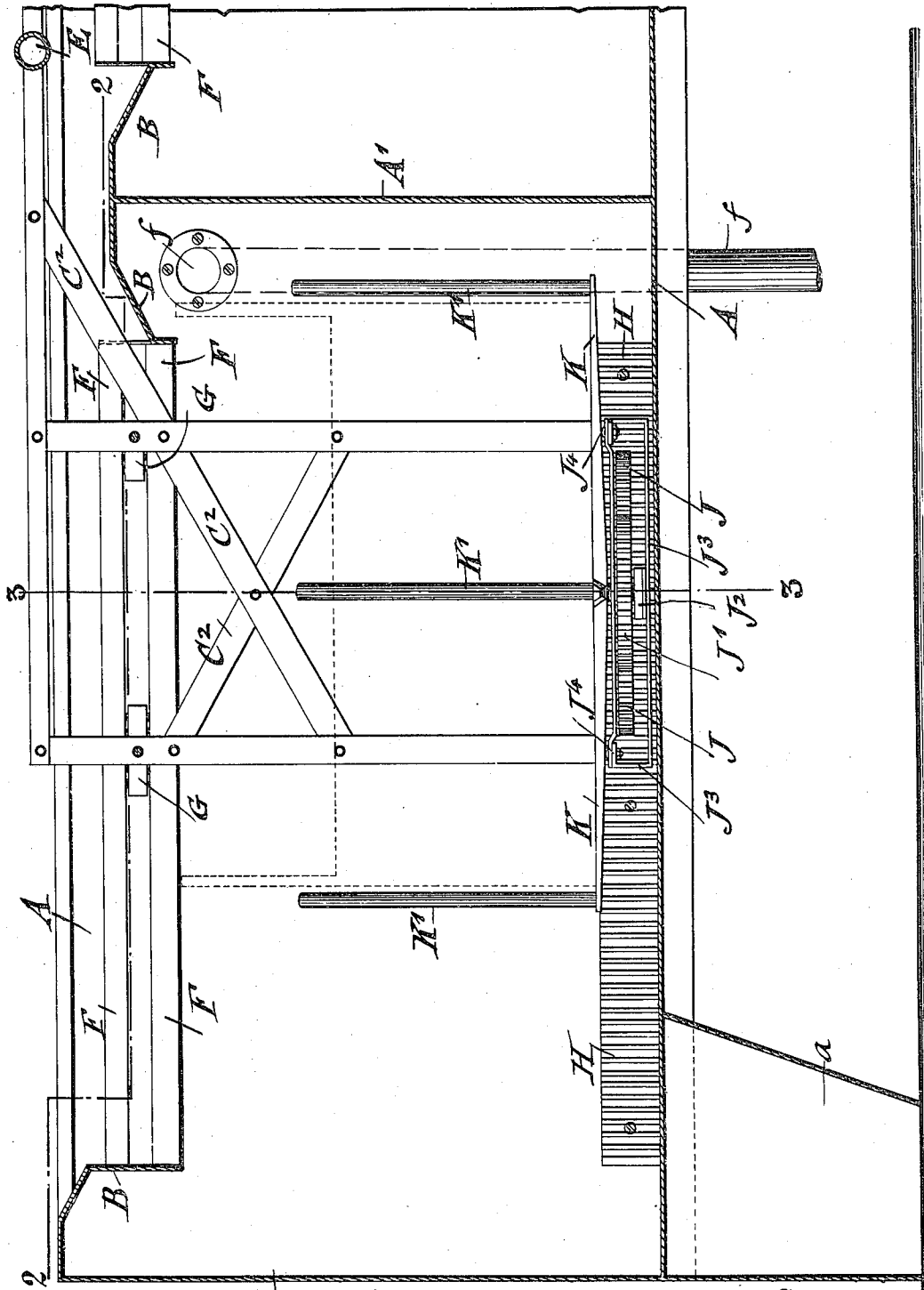


W. C. SCHRADER.
DISH WASHING MACHINE.
APPLICATION FILED OCT. 7, 1910.

Patented Mar. 21, 1911.

3 SHEETS—SHEET 1.

987,602.



Witnesses:
John Murtagh
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Fig. 1.

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987,602.

3 SHEETS--SHEET 2.

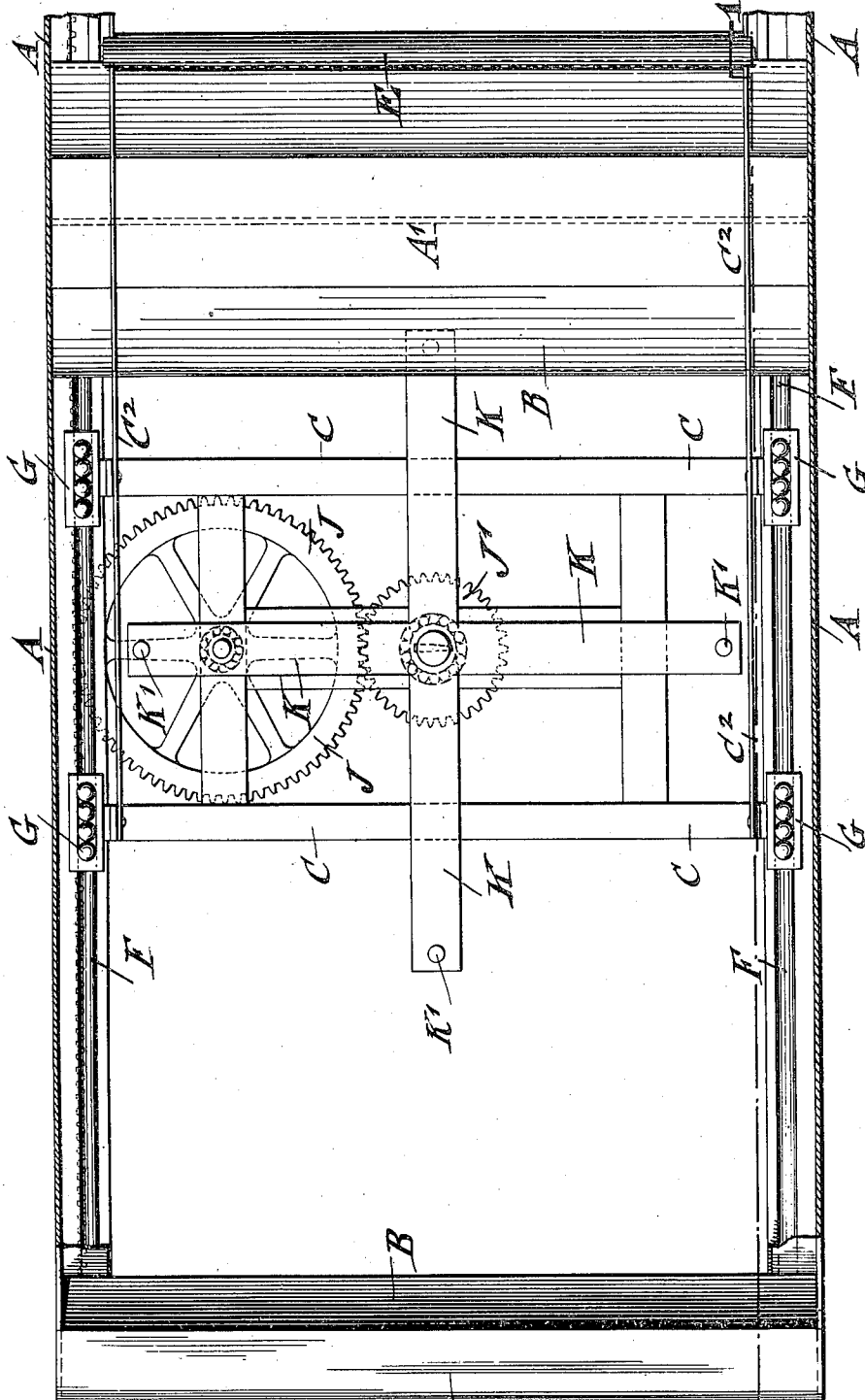


Fig: 2.

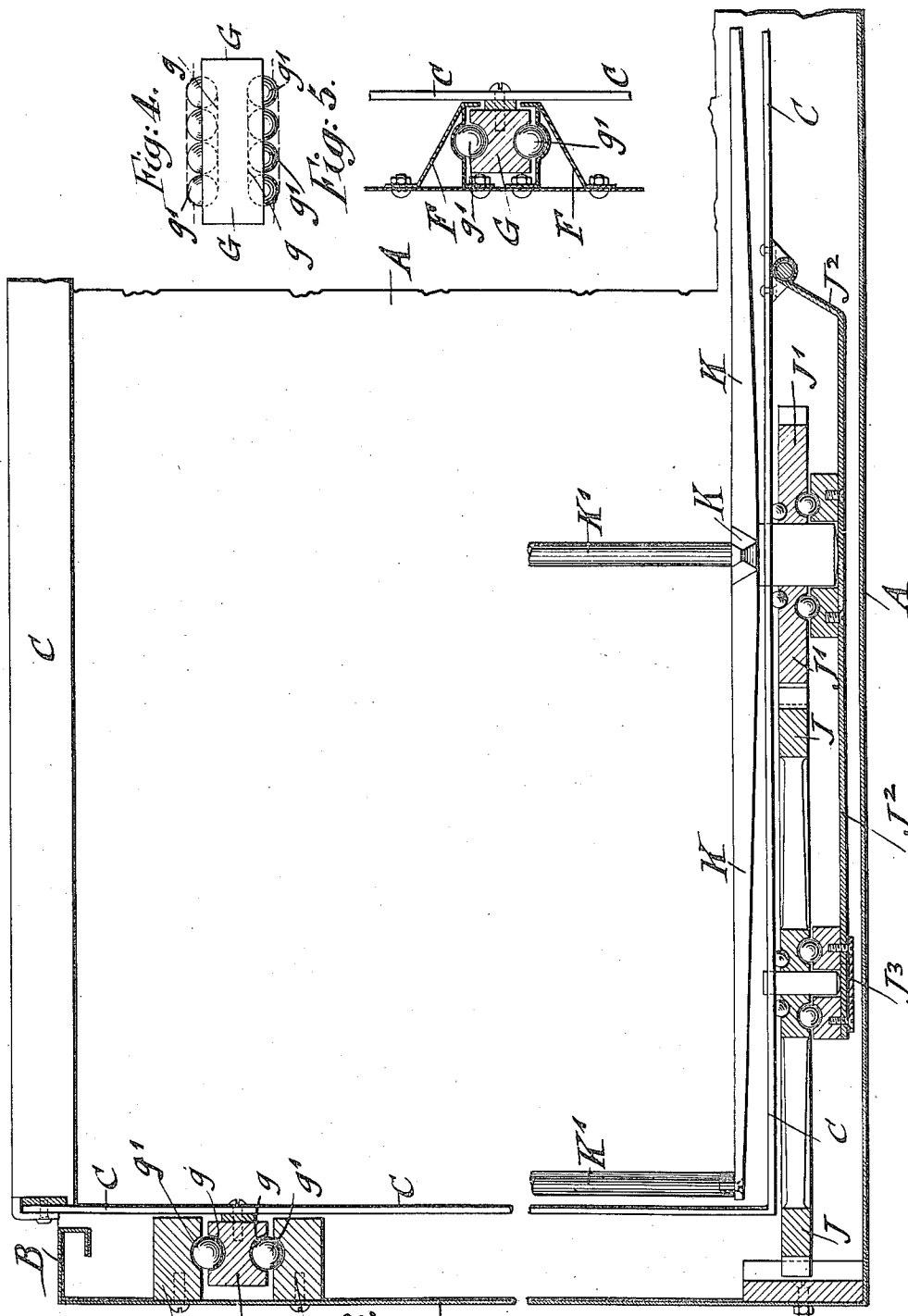
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Fig. 3.

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UNITED STATES PATENT OFFICE.

WILLIAM C. SCHRADER, OF KANSAS CITY, MISSOURI.

DISH-WASHING MACHINE.

987,602.

Specification of Letters Patent.

Patented Mar. 21, 1911.

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To all whom it may concern:

Be it known that I, WILLIAM C. SCHRADER, a citizen of the United States of America, residing in Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Dish-Washing Machines, of which the following is a specification.

This invention relates to an improved dish-washing machine which is intended to be operated by hand power and by which the dishes, which are placed in a suitable wire-basket, are subjected to an effective washing and rinsing operation, the machine being intended and especially adapted for the use of families, boarding houses, restaurants, etc., for which the power-driven washing-machines are too expensive; and for this purpose the invention consists of a dish-washing machine which comprises a tank made of two or more compartments and provided with stationary dashers at opposite ends, a horizontally-reciprocating carriage operated by a handle-rod, a rotary basket in said carriage, tracks attached to the side-walls of the tank for guiding the carriage, and a motion-transmitting gearing for rotating the basket during the reciprocating motion of the carriage.

The invention consists further of certain details of construction which will be more fully described hereinafter and finally pointed out in the claims.

In the accompanying drawings, Figure 1 represents a side-elevation partly in vertical longitudinal section through the tank, of my improved dish-washing machine on line 1—1, Fig. 2; Fig. 2 is a plan-view of the operating parts shown in Fig. 1, partly in section on line 2, 2, Fig. 1, Fig. 3 is a vertical transverse section on line 3—3, Fig. 1, drawn on a larger scale and showing the gear-track for rotating the basket; Fig. 4 is a detail vertical section of a modified form of guide-track for the carriage; and Fig. 5 is a detail side-view of one of the guide blocks of the carriage drawn on a larger scale.

Similar reference characters indicate corresponding parts throughout the several figures.

Referring to the drawings, A represents a tank which is made of oblong, oval or other shape and of copper, galvanized iron or other suitable material, and reinforced at the corners and edges by means of angle-

iron riveted thereto. The tank is supported on suitable legs *a* located at the lower corners of the same. For a single washer, the tank A is divided by a transverse partition A' into a larger compartment for washing the dishes and into a smaller compartment for rinsing the same after washing. The washing compartment is filled with boiling soap-water, while the rinsing compartment is filled with clean water for rinsing. Each compartment is equipped at opposite ends with an inwardly-projecting deflector B at its upper edge, as shown in Fig. 1. In the washing compartment is arranged an upright carriage C, which is composed of upright side-frames and a transverse bottom-frame. The side-frames are provided at their upper parts with guide-blocks G, which are guided in tracks F, F, attached to the side-walls of the tank A. The guide-blocks G are provided at their upper and lower sides with grooves *g* and anti-friction steel-balls *g'*, which are placed into the grooves *g*, as shown clearly in the detail Fig. 4. One of the diagonal braces C² of the side-frames C is extended in upward direction and attached to an extension of the upper side-rail of the carriage, said extensions supporting a transverse tubular handle-rod E, by which the carriage is moved to and fro in the washing compartment. The anti-friction guide-blocks G are guided between the tracks F, F, as shown clearly in Fig. 1, and permit the easy movement of the carriage from one end of the washing compartment to the other. Each compartment is provided with an overflow pipe *f*, which is located near the partition between the compartments and which is connected with a suitable drain-pipe. Water for the compartments is supplied by suitable faucets (not shown), which are arranged above the tank. The water can be heated by either gas or steam. When heated by gas, a suitable burner has to be arranged under each compartment, and when heated by steam, a steam supply-pipe is provided, which is connected with one end of each compartment and provided with a check-valve to allow the steam to circulate through the water. The tracks F are made either of solid steel, as shown in Fig. 3, and grooved at their faces adjacent to the guide-blocks, or they are made of stout sheet steel, as shown in Fig. 5, for permitting the free movement of the carriage on the ball-bearings of the

guide-blocks during its reciprocating motion. The guide-blocks are bolted to the upright side-frames of the carriage, as shown clearly in detail in Figs. 3 and 5.

5 Adjacent to the bottom of the tank A is arranged on one side-wall of the same a so-called rack-gear H, which is formed of a rack-shaped bar, attached to the side-wall and which intermeshes with a gear-wheel J, the shaft of which is supported in an anti-friction bearing in the bottom of the carriage, said gear-wheel meshing with a pinion J', the shaft of which also turns in an anti-friction bearing in the bottom-frame of the carriage, as shown in Figs. 1 and 2. The pinion-shaft is located midway between the side-walls of the washing compartment and on the shaft is mounted a basket-holder K which is located between the side-walls of the carriage and formed of four radial arms that are provided at the outer ends with upright basket-guards K'. The baskets for holding the dishes are made of wire and provided with bumping-boards and weed-coverings of the usual construction. The wire-baskets are galvanized, and equipped with two wire handles, by which they are lowered into and removed from the basket-holder and the space between the side-frames of the carriage. The carriage is made entirely of iron-straps open at the top, and braced by the transverse bottom-frame. Below the bottom-frame of the carriage C is arranged a gear-holding frame J², which is hinged to the bottom-frame and attached to the same at the opposite end and by an anchor plate J³ and bolts J⁴. The frame J² supports the cups for the anti-friction bearings of the gear-wheel J and pinion J', as shown in Fig. 3. The hinge-connection of the gear-holding frame J² with the bottom-frame of the carriage C permits the easy removal of the gears and ball-bearings in case they are to be cleaned or repaired. The basket-holder K is attached to the shaft of the pinion J² and moves with the carriage, being simultaneously rotated by the intermeshing of the gear-wheel J with the rack-gear H and the pinion J². After the wire-basket, with the dishes to be washed, is placed into the basket-holder, the carriage is moved to and fro by the handle-rod in the washing compartment, so that by the intermediate gearing, 55 a rotary reciprocating motion is imparted to

the basket-holder, so that the hot soap water is thrown forcibly on the surface of the dishes and produces the washing and cleaning the same. The wire basket, after the dishes are washed, is lifted out of the basket-holder and placed into the rinsing compartment for final cleaning. The stationary dashers prevent the spattering of the water from the washing compartment, due to the reciprocatory motion of the carriage and the rotary reciprocating motion of the basket-holders, and return the water into the lower part of the compartment.

The washing-machine can also be constructed on the double principle by arranging both compartment as washing compartments and placing a carriage and basket-holder in each compartment. In this case, both carriages are connected with the same operating handle-rod and operated thereby. The second washing compartment is also provided with deflectors D at opposite ends. In this case, a separate rinsing compartment may be provided for both washing compartments.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A dish-washing machine, comprising a washing compartment, a horizontally reciprocable carriage provided with an operating handle-rod, horizontal means for guiding said carriage, a basket-holder supported by said carriage, and means for imparting a rotary motion to the basket holder during the reciprocation of the carriage.

2. In a dish-washing machine, the combination of a washing compartment, a carriage reciprocable in the same, means for sustaining and guiding said carriage in said compartment, a basket-holder carried by the carriage, a stationary rack-gear at the lower part of the washing compartment, and transmission gearing between the rack-gear and the basket-holder for imparting rotary motion to the same during the reciprocation of the carriage.

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

WM. C. SCHRADER.

Witnesses:

W. J. KLENUN.

FRANK KRITZ, Jr.