

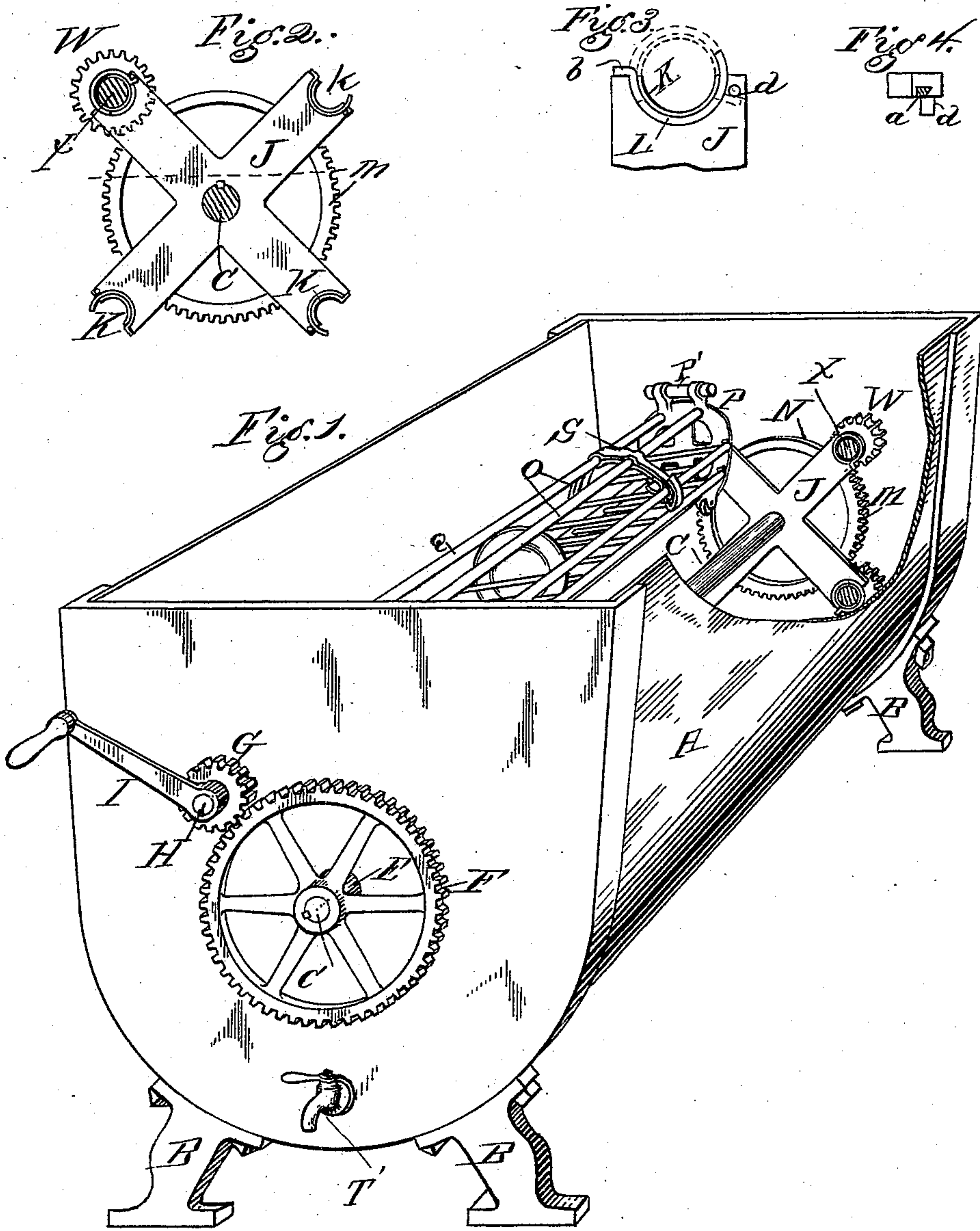
(No Model.)

3 Sheets—Sheet 1.

G. S. BLAKESLEE.
DISH CLEANER.

No. 532,523.

Patented Jan. 15, 1895.



Witnesses:
Chas. Burnap
Cyrus Burnap

Inventor
George S. Blakeslee
By his Attorney
Jas. A. Cowles

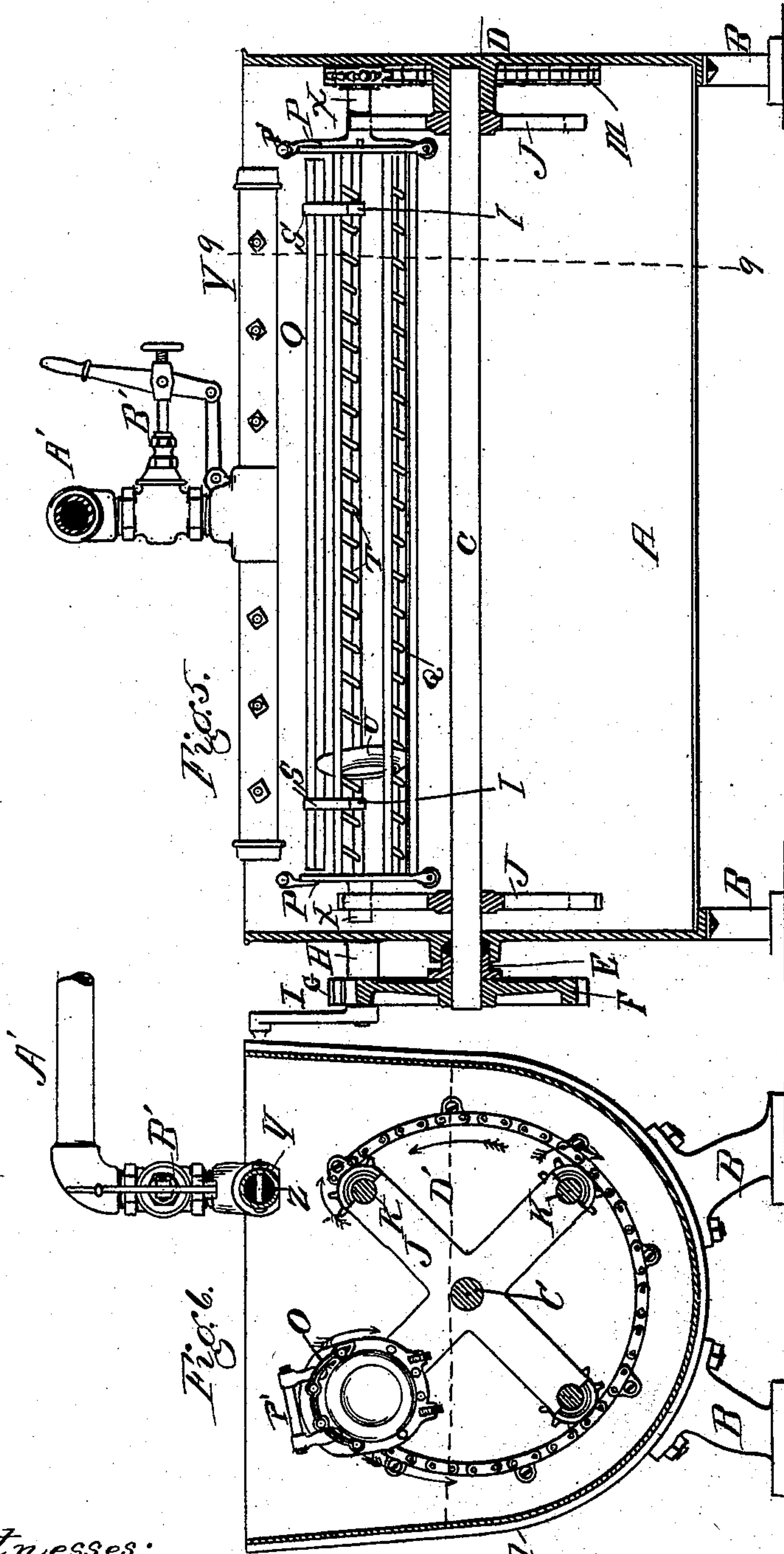
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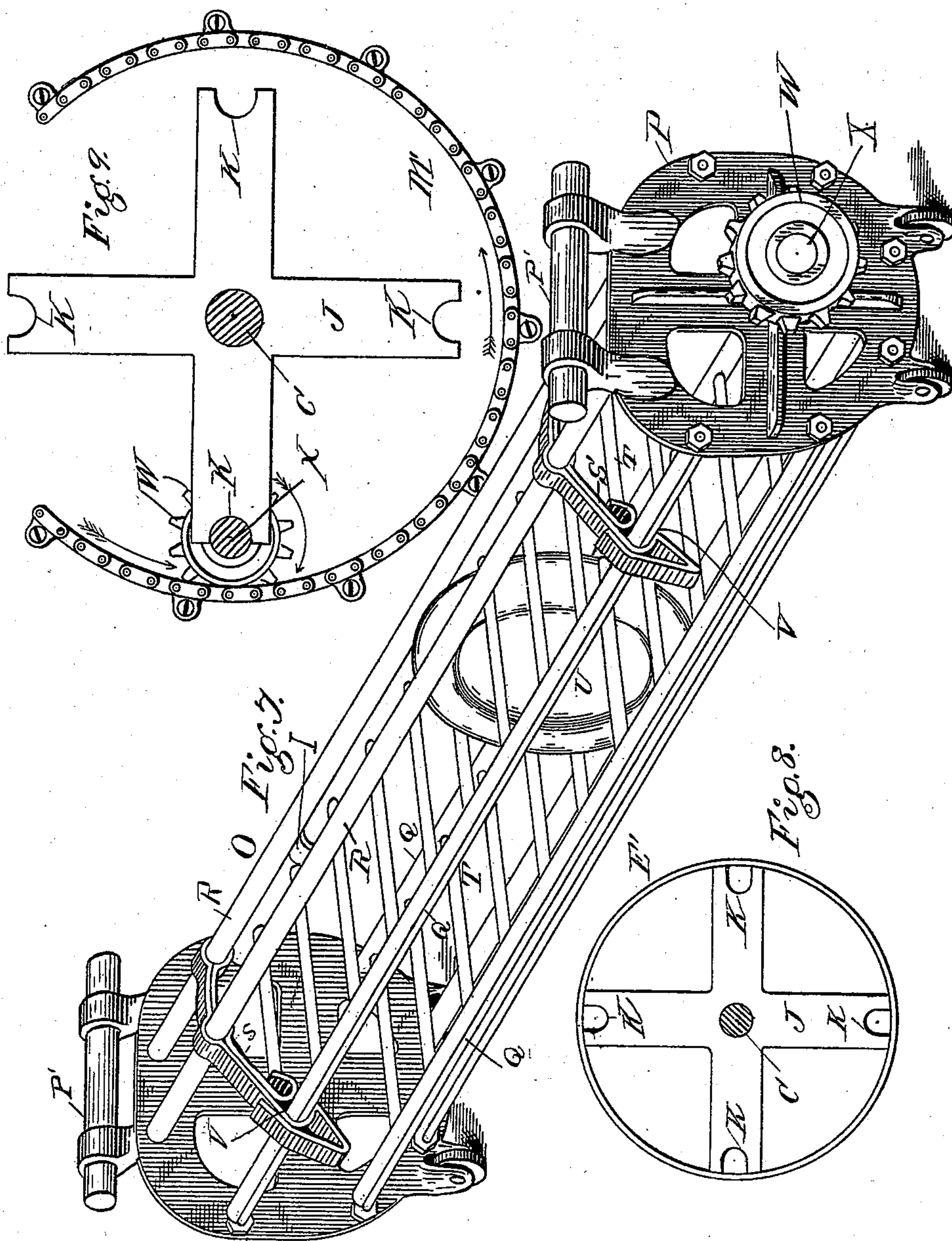
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G. S. BLAKESLEE.
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UNITED STATES PATENT OFFICE.

GEORGE S. BLAKESLEE, OF CHICAGO, ILLINOIS.

DISH-CLEANER.

SPECIFICATION forming part of Letters Patent No. 532,523, dated January 15, 1895.

Application filed September 19, 1891. Serial No. 406,269. (No model.)

To all whom it may concern:

Be it known that I, GEORGE S. BLAKESLEE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have made certain Improvements in Dish-Washing Machines, of which the following is a specification.

Figure 1 is a perspective view of the tank with a portion cut away to show parts of the interior mechanism. Fig. 2 is a sectional view of one end of the main shaft, showing one of the cross-heads and mechanism for rotating the baskets upon their axes. Fig. 3 is a detail of the socket end of one of the cross-head arms. Fig. 4 is a detail, being a plan view of a portion of the end of one of the cross-head arms, showing the device for securing the basket gudgeons in place. Fig. 5 is a longitudinal sectional view of the washing machine. Fig. 6 is a cross sectional view on line 9—9 of Fig. 5, showing a modified apparatus for rotating the baskets upon their axes. Fig. 7 is a perspective view of the basket used. Fig. 8 is a view of a modified form of cross-head. Fig. 9 is a view showing a modified device for revolving the baskets upon their axes.

My present invention relates to dish-washing machines, and particularly to that class of such machines in which the dishes to be washed are passed through a tank of water for the purpose of washing them.

Heretofore washing machines have been constructed in which the dishes to be washed have been placed in baskets or receptacles and have then been immersed in water contained in a tank forming part of the machine, the dishes being moved through the water in a circular path. In some instances the dishes have been placed so as to lie in the same plane as the path in which they move, and in other instances they have been placed obliquely so as to lie at an angle to the plane of their motion, and the latter arrangement has been found to be more satisfactory, as the water presents greater resistance to the movement of the plates and consequently they are scoured in passing through the tank.

My present invention has for its object to provide an improved method of washing dishes by machinery, in which the dishes will

be more effectually scoured in a given time than by any method heretofore used; also to provide an improved machine which will put into practice my improved method.

To this end my invention consists in giving the dishes a rotary motion upon their own axes, in addition to their movement in a circular path through the water, by which operation I find that the water is violently agitated and the dishes much more thoroughly cleansed than they have been by any process heretofore used.

The improved mechanism by which my method is put into practical operation is illustrated in the accompanying drawings, in which—

A indicates a tank supported by pedestals B.

C indicates the main shaft of the machine, which passes through the tank longitudinally, at one end working in a socket D (see Fig. 5) and at the other end extending through the end of the tank through a common stuffing-box E. On the latter end the shaft C carries a cogged wheel F.

G indicates a pinion wheel which is mounted upon a shaft H pivotally secured to the end of the tank in proximity to the cog wheel F, so that the pinion wheel G meshes with such cog wheel.

The pinion wheel G and shaft H are rotated by a crank I.

In the interior of the tank A, at each end of the main shaft C, are placed cross-heads J. The end of each of the arms of the cross-heads terminates in a socket K. As shown in Figs. 2 and 3, in the socket end of each arm is a movable circular band L which moves in a circular slot α , seen in Fig. 4, which slot extends beneath the socket bearing, as shown in Fig. 3. When the circular band L is withdrawn from its socket it will move in a circular path over the socket, forming with said socket a complete circle, and inclosing the bar which, as will be hereinafter described, is fitted in said socket. When withdrawn from its slot the band L is secured by a pin d carried at one side of the socket K, as shown in Fig. 3.

A cog wheel M is secured upon one end of the tank A within the tank, which wheel is

concentric with the shaft C. As shown in Figs. 1 and 2, a portion of the surface of the cog wheel M is blank, as shown at N.

To hold the dishes while being washed, I employ a basket O, which is made of heads P joined together by parallel rods Q, and a cover, which is made of rods R bound together at the proper distance apart by straps S. The straps are hinged at one end to one of the upper parallel rods Q, as at I, Fig. 5. At the other end they are made hooked in form, as at V, and are adapted to embrace another of the upper parallel rods Q when the cover is closed down between the heads P. The interior of the basket O is divided into compartments by cross rods T placed at an oblique angle with the parallel side rods Q, into which compartments the dishes U are placed, after which the cover is closed down over them and locked by means of the straps S. The basket is provided with handles P' preferably attached to the heads P, as best seen in Fig. 7.

At the center of each basket head is a gudgeon X, which projects a short distance and is adapted to rest in the sockets K in the ends of the cross-head arms, and to be held there by the circular bands L above described. At the end of one of the gudgeons X is attached a gear wheel W which meshes with the cog wheel M. At one side of the center and above the baskets is located a wash-pipe Y, in the lower surface of which is a slot Z extending its entire length, as shown in Fig. 6. This wash-pipe receives a continuous supply of hot water by a pipe A', which pipe is provided with a quick-acting valve B'. The tank is filled with hot water up to a level indicated by the dotted line D in Fig. 6.

The baskets are first filled with dishes, after which they are placed in position with their gudgeons in the sockets at the ends of the cross-head arms, as shown in Figs. 1 and 5. The crank I is then turned and the main shaft C thereby rotated, causing the baskets to travel in a circular path through the water of the tank. The gear wheels W will move around the cog wheel M, which, being stationary, causes the baskets to revolve upon their own axes while moving through the tank. As they travel around the cog wheel M the dishes are submerged in the water more than one-half the distance, and as the baskets turn upon their own axes much faster than they move around the axis of the cog wheel M, and as the dishes stand obliquely to the plane in which they travel,—caused by the oblique position of the partition T,—they are submitted to a lively and violent action of the water and are thereby thoroughly cleansed. When the baskets pass under the wash-pipe Y the valve B' is opened, when clean hot water dashes onto the dishes, thoroughly rinsing them. While the gear wheel W is traveling over the smooth space N of the cog wheel M it does not revolve, and the handle C of the basket

is uppermost. The basket may then be lifted from its position and another basket filled with soiled dishes be placed in position.

The ratio between the diameter of the two cog wheels G and F (see Fig. 1) can be varied from one to four, one to three, or one to two, according as the cross-heads J are made with four, three or two arms; so that by one rotation of the cog wheel G a basket of washed dishes will be moved into position to be replaced by a basket of soiled ones.

At T' is shown means for discharging the water from the tank when desired.

I have described and shown an ordinary cog wheel M, but it is evident that I can use a different form of wheel for this purpose, or an open link chain M', Fig. 9 can be used. In using the latter device the circular band L for securing the gudgeons in the sockets K can be dispensed with, as the sprocket wheel which would be used in place of the gear wheel W would travel over the under side of the chain and be thereby retained in position. The gudgeon at the other end of the basket would be retained in position by means of a hoop E' (Fig. 8), which would be fitted upon the cross-head over the sockets K K and gudgeons.

I do not wish to limit myself to the specific devices used, as many modifications could readily be devised for doing the same work.

I do not wish to be understood as confining myself to the use of the specific basket shown, as a basket of any other construction, suitable for the conditions required, may be employed. The basket should be sufficiently open to permit the free passage of water to the dishes contained therein.

I believe that I am the first to provide an apparatus for washing dishes comprising a tank, a suitable basket-carrier movable therein, and a rotatable dish-holding basket mounted on the carrier and having mechanism for rotating the same.

That which I claim as my invention, and desire to secure by Letters Patent, is—

1. A dish-washing machine consisting of a tank, a basket carrier movable through the water in the tank, a dish-holding basket or receptacle rotatable on said carrier, devices for operating the carrier to move the dish-holding basket through the water in the tank, and means for rotating the dish-holding basket upon said carrier, substantially as described.

2. A dish-washing machine, consisting of a tank, a rotatable support, a dish-holding basket or receptacle axially rotatable on said support, devices for rotating the support, and means for axially rotating the basket on said support as the latter is rotated in the tank, substantially as described.

3. The combination of a tank, a shaft journaled therein and provided near each end with attached basket-supporting arms, means for rotating the shaft, dish-holding baskets journaled in said arms and having their axes parallel with the axis of the shaft, and gearing lo-

5 cated inside the tank and in operative connection with the baskets for axially rotating the baskets on the arms as said baskets are carried around in the tank by the rotating shaft and arms, substantially as described.

10 4. The combination with a tank, of a horizontal shaft journaled therein and provided near each end with an attached basket-support, means for rotating the shaft, dish-holding-baskets journaled in said supports and

having their axes parallel with the axis of the shaft, and gearing operated by the rotation of the shaft for axially rotating the baskets on the supports as said baskets are carried around in the tank by the rotating shaft and supports, substantially as described. 15

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