

No. 730,470.

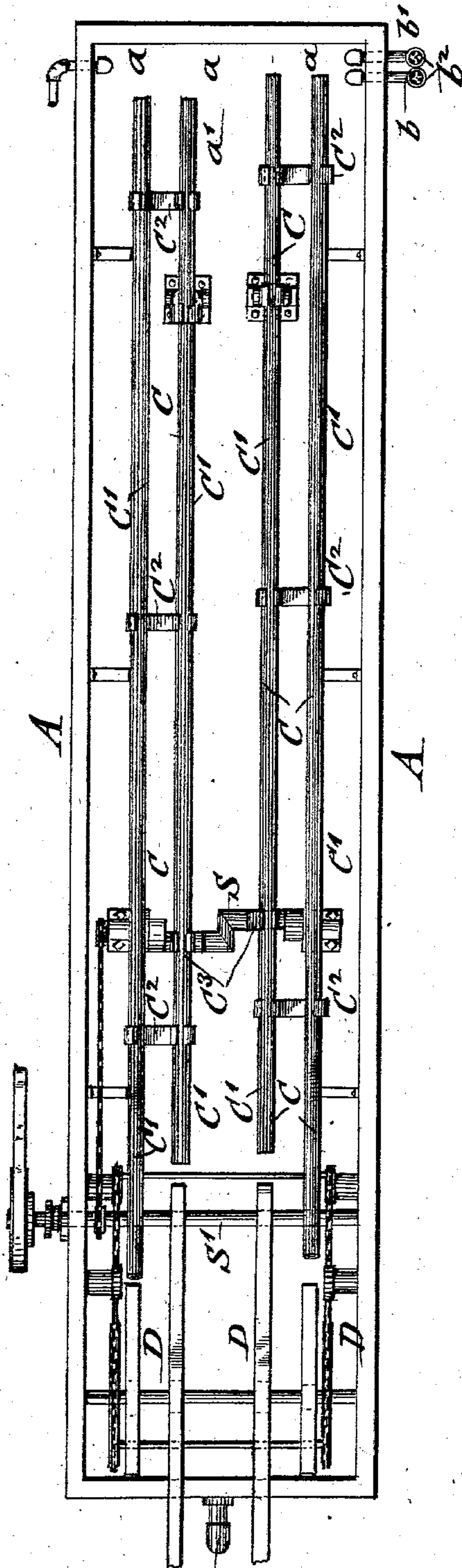
PATENTED JUNE 9, 1903.

J. MÜLLER.
BARREL WASHING MACHINE.
APPLICATION FILED SEPT. 16, 1902.

NO MODEL.

3 SHEETS—SHEET 1.

Fig: 1.



Witnesses
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By his Attorneys
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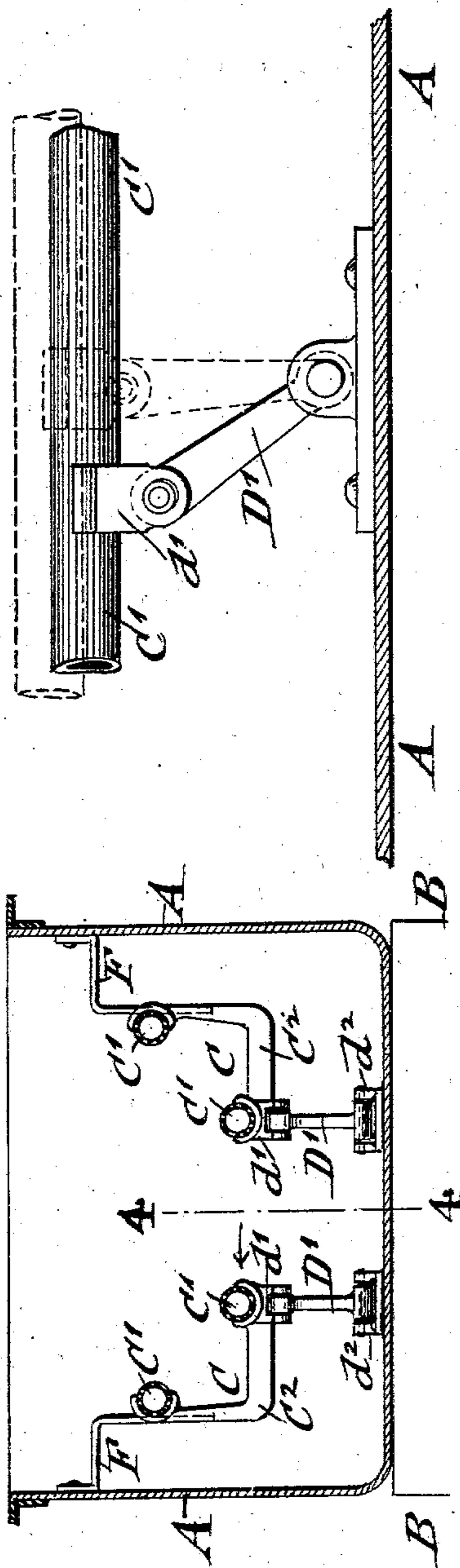
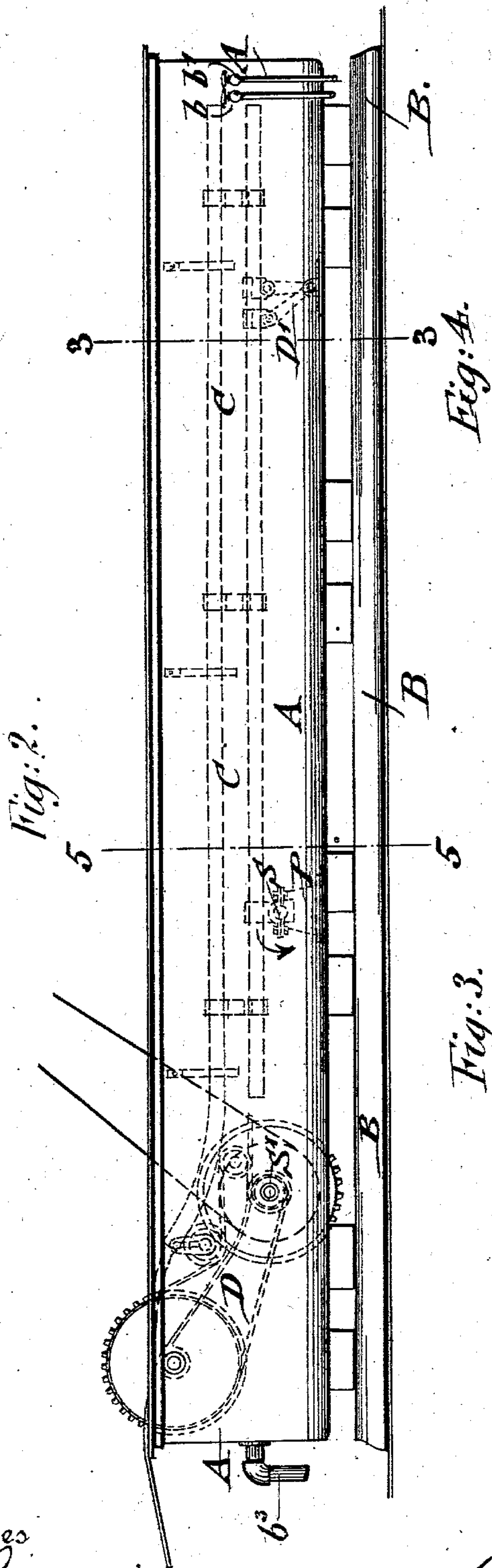
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

Fig: 6.

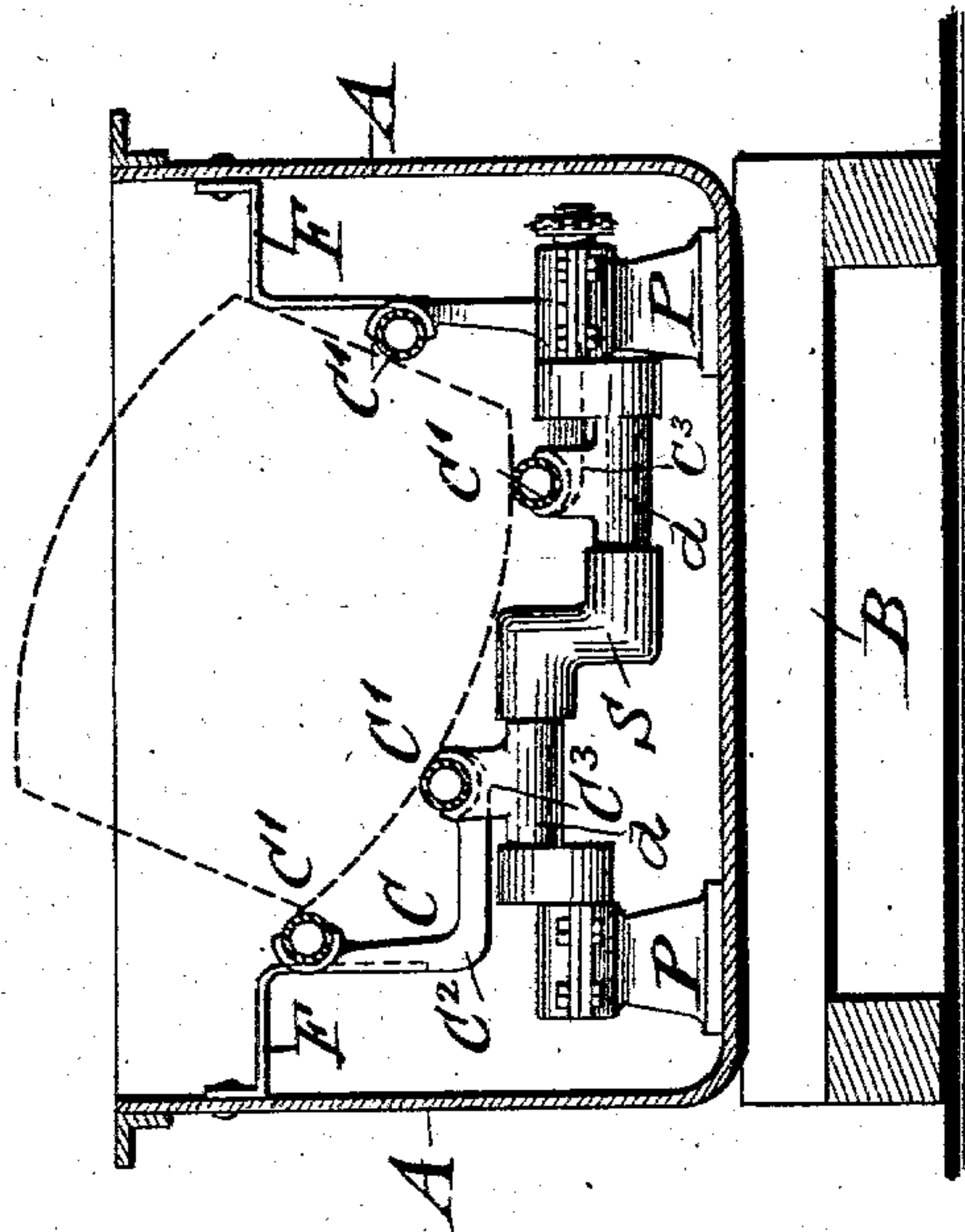
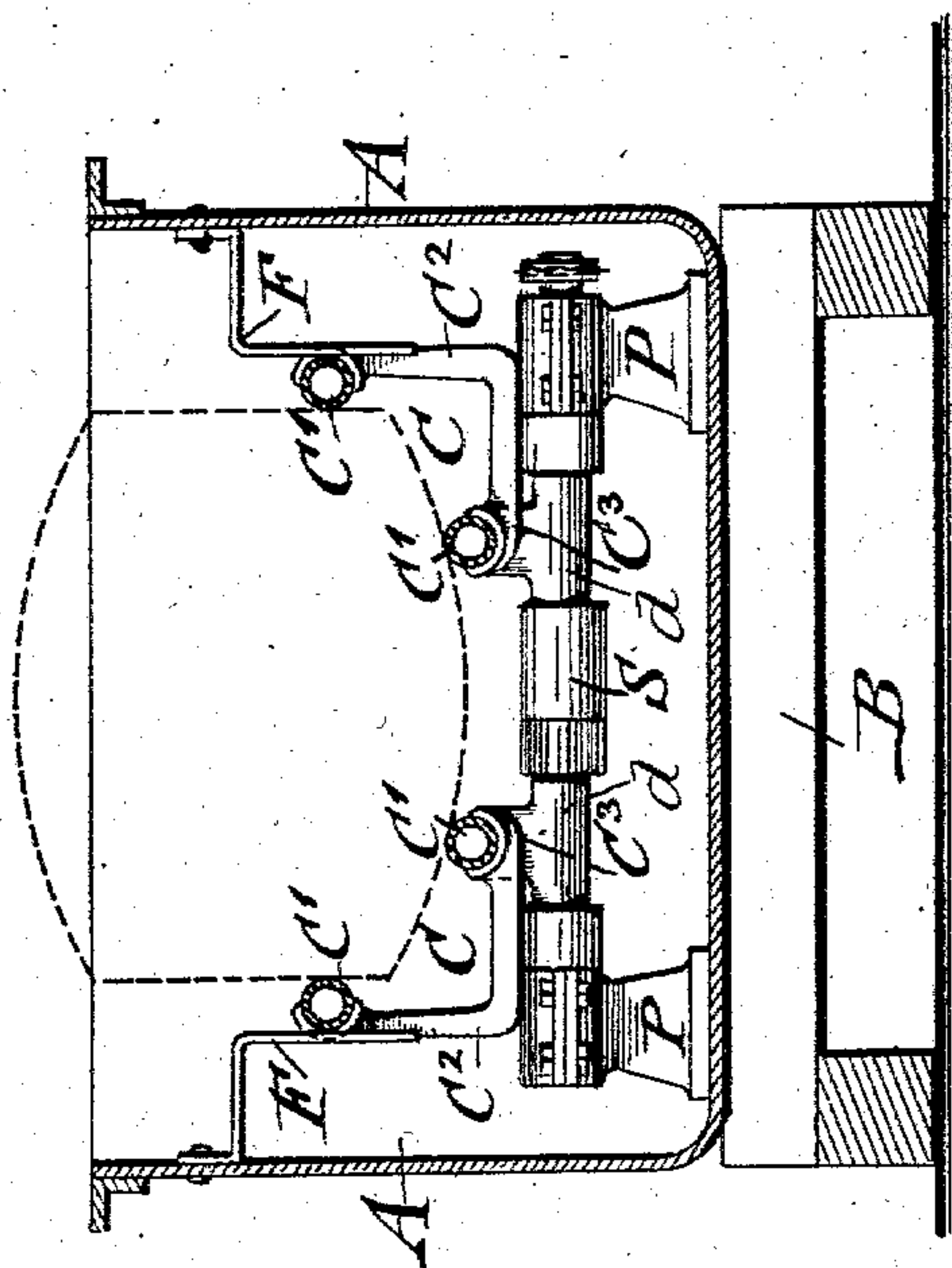


Fig: 5.



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UNITED STATES PATENT OFFICE.

JACOB MÜLLER, OF NEW YORK, N. Y., ASSIGNOR TO CAROLINE H. MÜLLER,
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BARREL-WASHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 730,470, dated June 9, 1903.

Application filed September 16, 1902. Serial No. 123,572. (No model.)

To all whom it may concern:

Be it known that I, JACOB MÜLLER, a citizen of the United States, residing in New York, borough of Manhattan, and State of New York, have invented certain new and useful Improvements in Barrel-Washing Machines, of which the following is a specification.

In the barrel-washing machine for which Letters Patent were granted to me heretofore, No. 657,354, dated September 4, 1900, a stationary washing-tank was used in connection with a cradle located in said tank and means for imparting a combined laterally-rocking and longitudinally-reciprocating motion to said cradle. The operating mechanism of said barrel-washing machine, the construction of the cradle, and the guide-rails employed, however, were complicated and expensive, so that the machine did not meet with the success to which its practical operation entitled it. It was therefore my aim to simplify the construction of the machine to such an extent that the cost of the same could be considerably reduced without impairing the efficiency of the same. For this purpose the motion-transmitting mechanisms were greatly simplified. The cradle instead of being made in one connected structure was divided into two independent sections, to each of which laterally-rocking motion is imparted, while at the same time a longitudinally-reciprocating motion is given to the independent cradle-sections; and in view of the foregoing the invention consists of a barrel-washing machine which comprises a washing-tank, independent cradle-sections located in said tank, one at each side of the same, a double-crank shaft connected with said independent cradle-sections, and means for imparting rotary motion to said crank-shaft, so that alternately vertically-reciprocating motion is imparted to the cradle-sections, whereby a laterally-rocking motion is imparted to the barrels passing over the cradle-sections.

The invention consists, further, in the combination with the cradle-sections and the mechanism for imparting alternately vertically-reciprocating motion to the same, of mechanism by which simultaneously with the vertically-reciprocating motion a longitudi-

nally-reciprocating motion is imparted to the cradle-sections.

The invention consists, next, in the construction of the cradle-sections, stationary guide-brackets attached to the side walls of the washing-tank independently of the cradle-sections along which the rocking barrels are guided and by which the same are steadied in their combined rocking and rolling motion; and the invention consists, lastly, of certain details of construction, which will be fully described hereinafter and finally pointed out in the claims.

In the accompanying drawings, Figure 1 represents a plan view of my improved barrel-washing machine. Fig. 2 is a side elevation of the same. Fig. 3 is a vertical transverse section on line 3 3, Fig. 2, drawn on a larger scale. Fig. 4 is a detail vertical longitudinal section on line 4 4, Fig. 3, drawn on a still larger scale and showing the mechanism by which oscillating motion is imparted to the ingoing ends of the cradle-sections; and Figs. 5 and 6 are vertical transverse sections on line 5 5, Fig. 2, showing the different positions imparted by the double-crank shaft to the cradle-sections, so as to impart a laterally-rocking motion to the barrels.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents a tank, which is made of suitable length, so as to wash a number of barrels at the same time. The tank is preferably made of boiler-iron of suitable strength, which is reinforced at the upper edges by suitable angle-irons, while the lower corners are rounded off. The tank A is supported on a suitable bed-frame B, of wood, and provided at the ingoing end with supply-pipes b b' , having stop-cocks b^2 for supplying hot and cold water to the tank, so that the water can be readily kept at the temperature required for properly soaking and washing the barrels. The outgoing end of the tank is provided with a waste-pipe b^3 for conducting off the water from the tank. The barrels are conducted over the ingoing end from an inclined delivery-chute (not shown) and transferred to the ingoing ends of the cradle-sections. At the outgoing end

of the tank A is arranged a suitable mechanism D for taking up the barrels after they have been soaked and washed and delivering them to a barrel-scrubbing machine of any approved construction. (Not shown in the drawings.) Independent cradle-sections are arranged in the tank, one at each side of the same, symmetrically to the longitudinal center plane of the tank. Each cradle-section C is formed of two longitudinal tubular guide-rails C', that are connected by a number of angular braces C², as shown clearly in Fig. 3, said braces being attached, by means of concave ends, to the tubular guide-rails.

The lower guide-rail of each cradle-section is connected, adjacent to the delivering mechanism of the barrels, with a double-crank shaft S by means of a pedestal C³, which is provided at its lower end with a transverse sleeve d and placed on one of the crank-pins of the crank-shaft, as shown in Figs. 5 and 6. The crank-shaft S is supported in journal-bearings of pillow-blocks P, that are attached to the bottom of the washing-tank, the crank-shaft receiving rotary motion by a suitable sprocket wheel and chain transmission that is arranged at the inside of the tank from a driving-shaft S', which passes through a stuffing-box in the side wall of the tank to the outside and which receives rotary motion by a suitable power transmission from a counter-shaft in any approved manner. The lower guide-rails of the cradle-sections C are rigidly connected to the concaved ends of the pedestals C³, so that by the rotation of the double-crank shaft a combined vertically and longitudinally reciprocating motion is imparted to each cradle-section, but independently of and alternately with the other cradle-section. The ingoing ends of the lower guide-rails of the cradle-sections impart oscillating motion to links D', which are pivoted to semicircular straps d', attached to the lower guide-rails and to stationary lugs d², attached to the bottom of the tank, said pivot-links following the motion of the lower guide-rails, due to the throw of the cranks. The pivot-links D' support the ingoing ends of the cradle-sections and hold the same at a certain height, so that by the raising and lowering motion at the outgoing ends of the cradle-sections by the double-crank shaft a variable downward inclination is imparted to the cradle-sections from the ingoing toward the outgoing ends of the same, whereby simultaneously with the laterally-rocking motion imparted by the cradle-sections a slow gradual forward motion is given to the barrels. This is produced by the rotation of the double-crank shaft and the raising and lowering of the crank-pins and pedestals above and below the horizontal plane of the bearings, as in Fig. 5. The barrels assume a horizontal position as the cranks are horizontal, while when the cranks are in their intermediate position in a vertical plane the cranks, pedestals, and lower guide-rails of the cr-

dle-sections are at their extreme highest respectively lowest position and impart thereby a lateral throw to the barrels alternately toward the right or left, as shown in Fig. 6. This motion, together with the simultaneous longitudinally-reciprocating motion and inclination of the cradle-sections will impart a gradual forward motion to the barrels.

To the side walls of the tank are attached stationary guide-brackets F, which extend inwardly from the side walls, then in downward direction parallel with the side walls to some distance below the upper guide-rails of the cradle-sections, as shown clearly in Figs. 5 and 6, said guide-brackets serving for the purpose of guiding and steadying the upper guide-rails during their vertically-reciprocating motion and of preventing the barrels from leaving the independently-movable cradle-sections in case a too great speed of motion is imparted to the same. The guide-brackets F are adapted for so-called "half-barrels." When smaller barrels are to be washed in the tank, auxiliary guide-brackets are used, which are attached to the stationary guide-brackets F in Fig. 5, so as to permit thereby the washing of quarter-kegs or other barrels of smaller size. In this case the barrel-cradle sections are replaced by smaller cradle-sections, which are steadied by the auxiliary guide-brackets in their motion, though it is preferable to use a separate washing-machine for each size of barrels to be washed. The independently-actuated cradle-sections impart a laterally-rocking motion to the barrels simultaneously with a slow forwardly-rolling motion, so that they are automatically conducted through the cradle-sections from the ingoing toward the outgoing end of the tank and thoroughly washed at the inside and outside by the shaking action to which the barrels themselves and the water at the inside and outside of the same are subjected during this motion.

At the outgoing end of the tank is arranged the barrel-delivery mechanism D, by which the barrels are successively taken up and carried over the end of the tank to the scrubbing-machine. This delivery mechanism and its operation is fully described in my prior patent and does not require further description. By the independent actuation of the cradle-sections by the double-crank shaft and their oscillating pivot-link connection with the tank the construction of the machine is considerably simplified, also the motion-transmitting mechanisms, so that without impairing the efficiency of the barrel-washing machine the cost of the same is not only considerably reduced, but also the expense of repairing the same greatly diminished. My improved barrel-washing machine has therefore all the advantages of the machine heretofore patented by me, but without its complicated features and high cost of building the same.

Having thus described my invention, I

claim as new and desire to secure by Letters Patent—

1. The combination, with a washing-tank, of independent cradle-sections in said tank for receiving the barrels to be washed, and means for imparting alternately a combined vertically and longitudinally reciprocating motion to said cradle-sections, substantially as set forth.

2. The combination, with a washing-tank, of independent cradle-sections in said tank, formed of upper and lower guide-rails and located at opposite sides of the vertical center plane of the same, and means connected with the lower guide-rails of said cradle-sections for imparting alternately a combined vertically and longitudinally reciprocating motion to the same, substantially as set forth.

3. The combination, with a washing-tank, of independent cradle-sections for receiving the barrels to be washed, means near one end of the cradle-sections for imparting alternately a combined vertically and longitudinally reciprocating motion to the cradle-sections, and oscillating pivot-straps connecting the opposite ends of the cradle-sections with the bottom of the tank, substantially as set forth.

4. The combination, with a washing-tank, of independent cradle-sections in said tank, a double-crank shaft near the outgoing end of said cradle-sections, means for imparting rotary motion to said double-crank shaft, and pedestals hinged to the crank-pins of said crank-shaft and attached to the lower guide-rails of the cradle-sections, substantially as set forth.

5. The combination, with a washing-tank, of independently-actuated cradle-sections for receiving the barrels to be washed, said cradle-section formed by upper and lower guide-rails, a double-crank shaft near one end of the cradle-sections, pedestals hinged to the crank-pins of the cranks and attached to the lower guide-rails of the cradle-sections, and oscillating pivot-straps connecting the opposite ends of the cradle-sections with the bottom of the washing-tank, substantially as set forth.

6. The combination, with a washing-tank, of independent cradle-sections for receiving the barrels to be washed, means for imparting a combined vertically and longitudinally reciprocating motion to said cradle-sections, and stationary guide-brackets attached to the side walls of the tank for steadying the motion of the cradle-sections and the barrels in moving over the cradle-sections, substantially as set forth.

7. In a barrel-washing machine, a cradle composed of two independent cradle-sections arranged at opposite sides of the longitudinal center plane of the tank and composed of lower and upper guide-rails and angular braces connecting said rails, substantially as set forth.

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

JACOB MÜLLER.

Witnesses:

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C. P. GOEPEL.