

No. 754,494.

PATENTED MAR. 15, 1904.

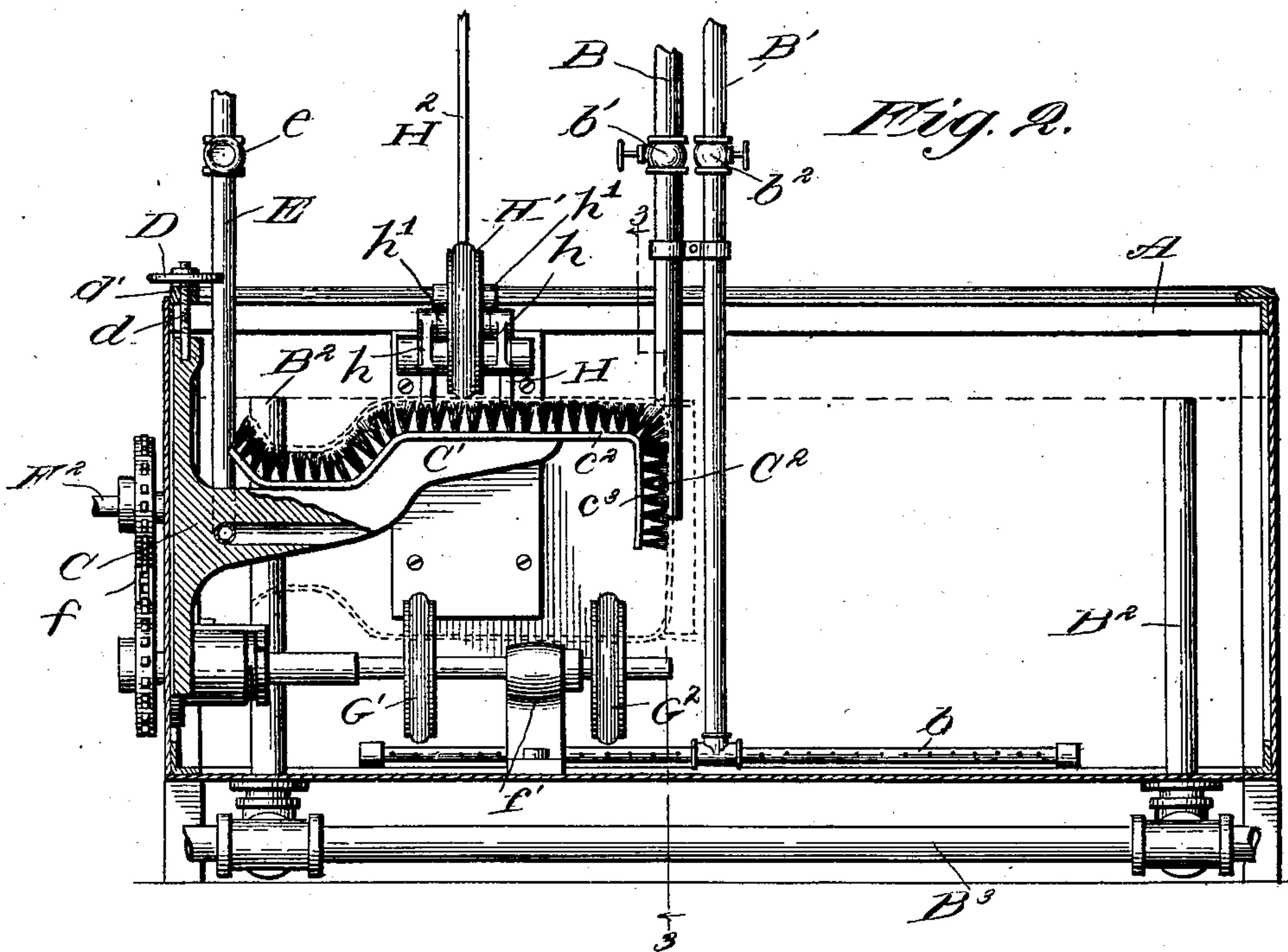
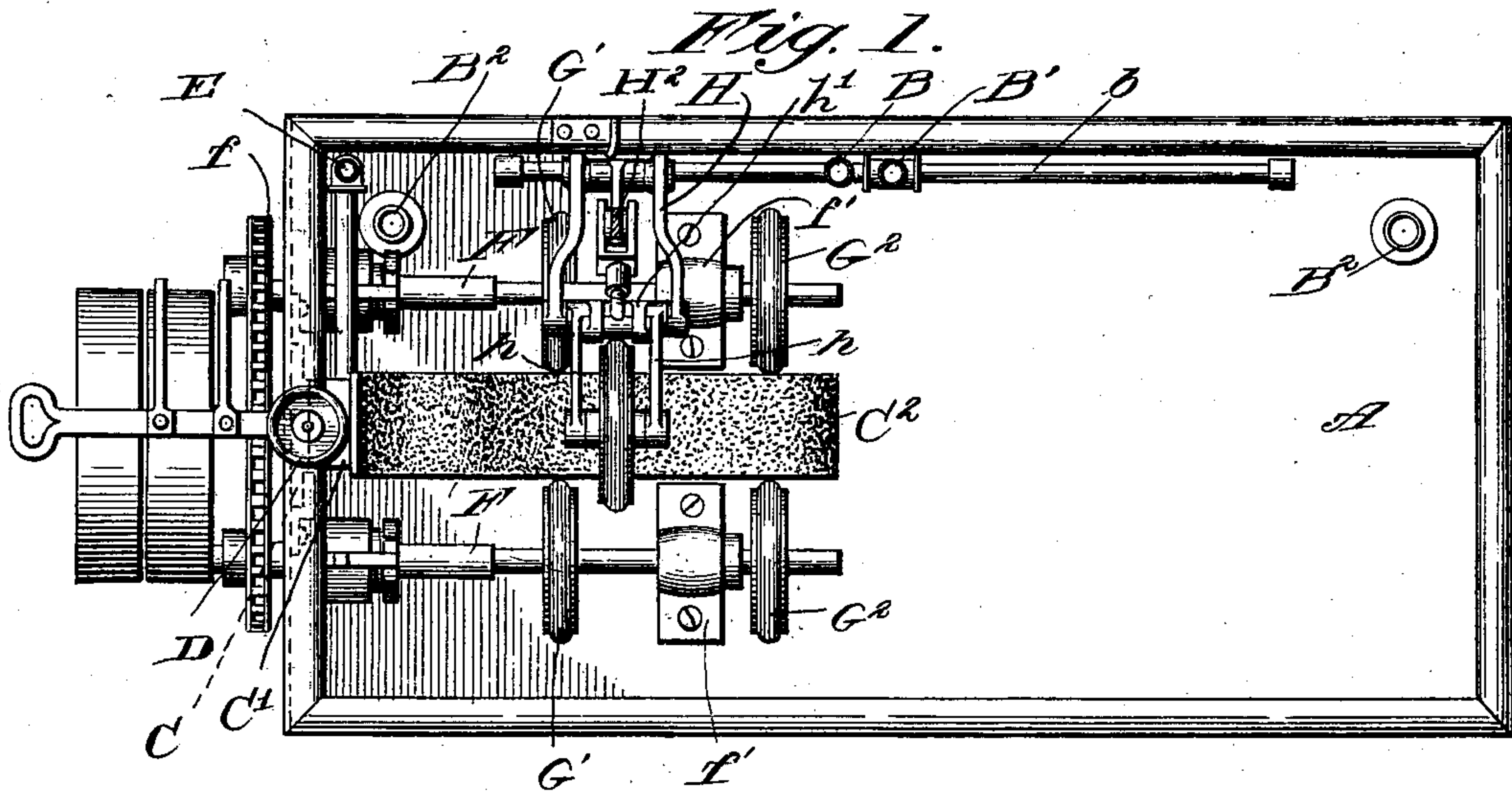
W. B. PAGE.

MACHINE FOR WASHING VESSELS OR RECEPTACLES.

APPLICATION FILED JAN. 21, 1901.

NO MODEL.

2 SHEETS—SHEET 1.

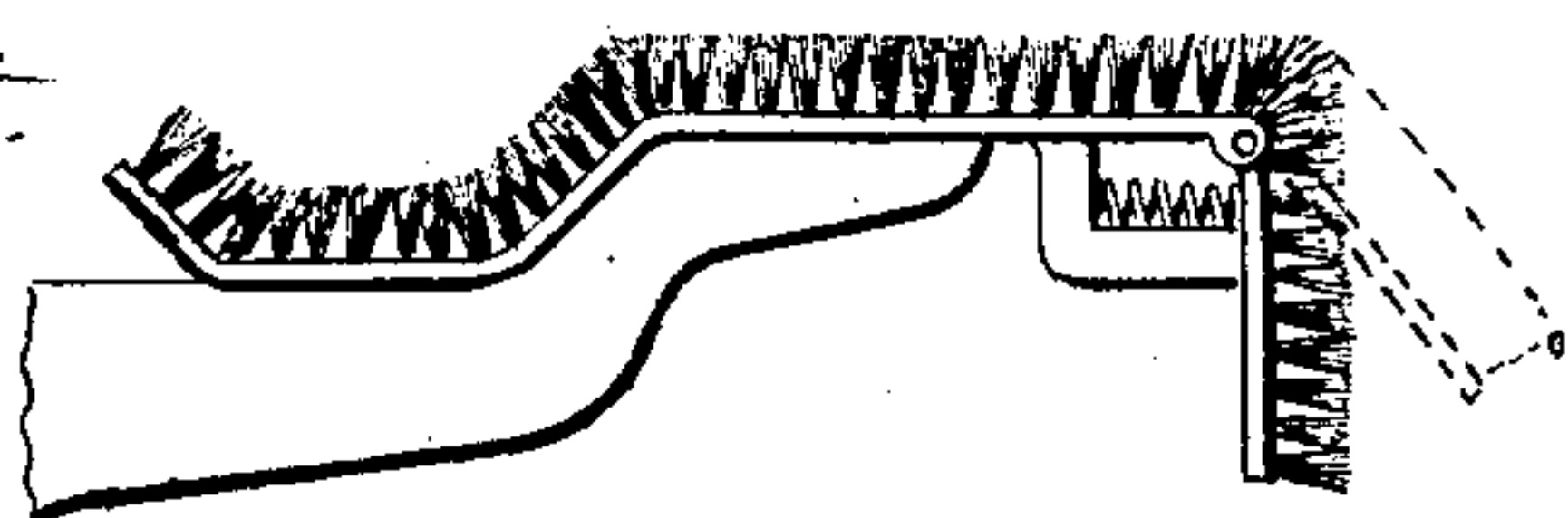


Witnesses:

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*Fig. 1.*



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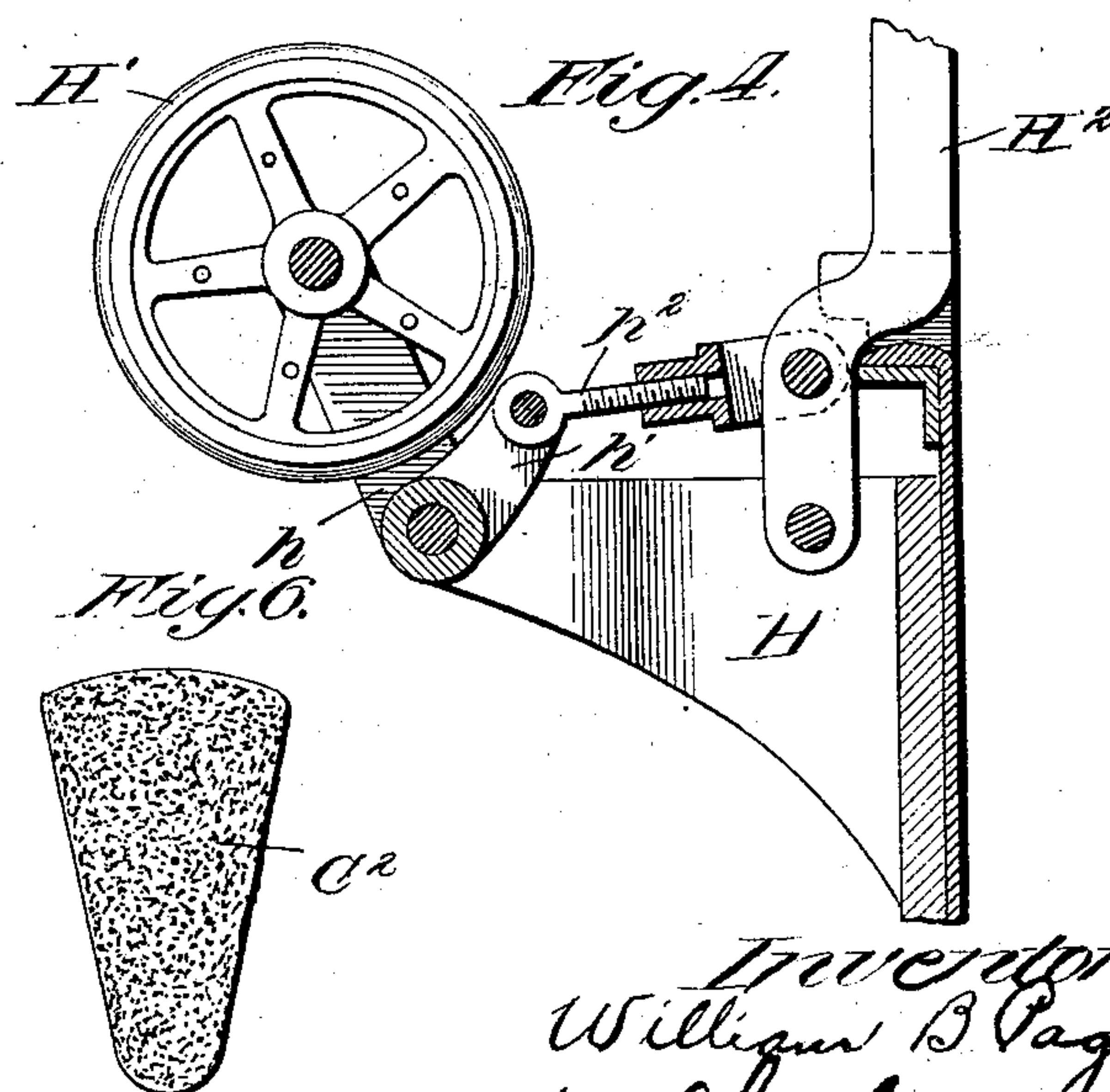
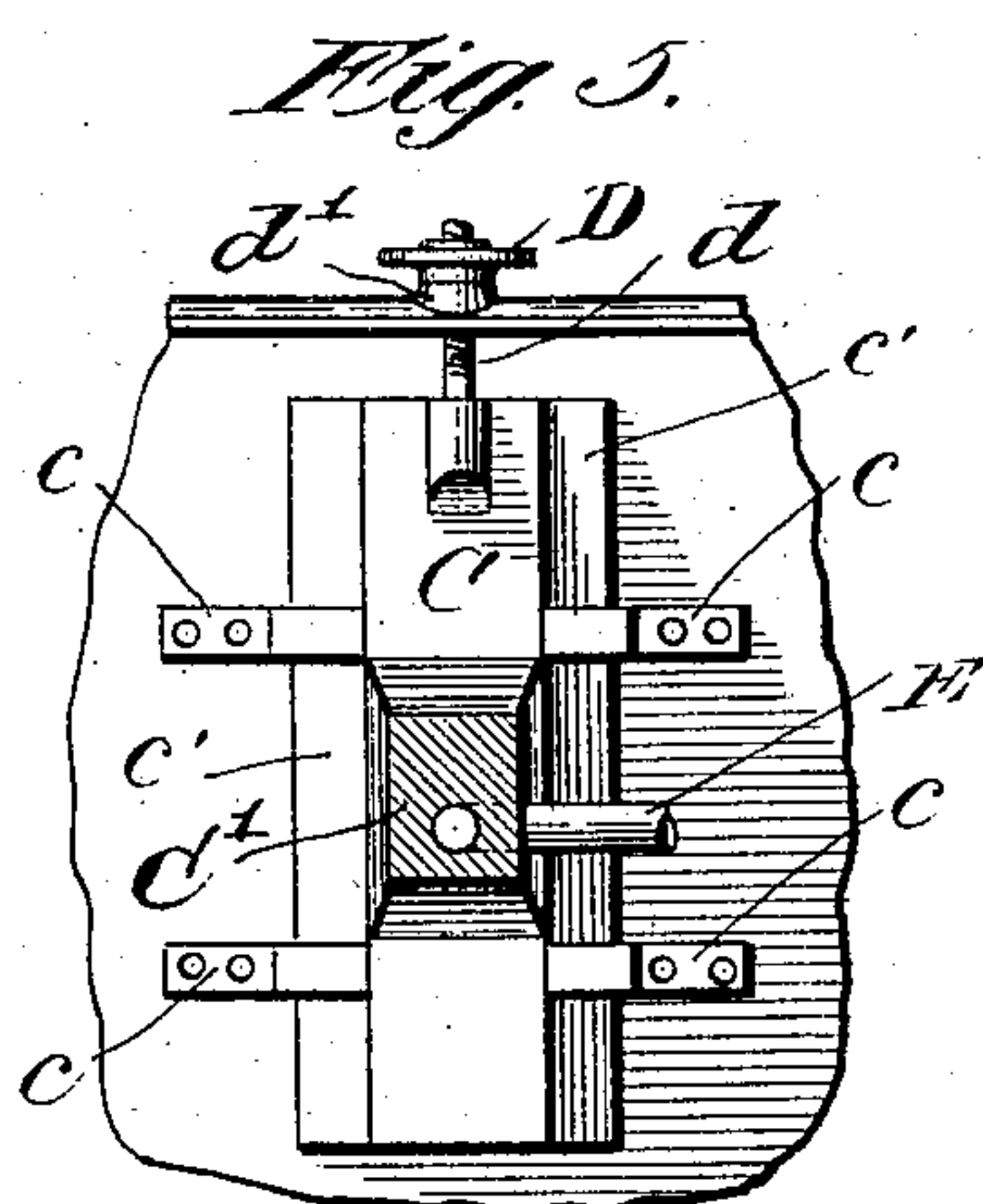
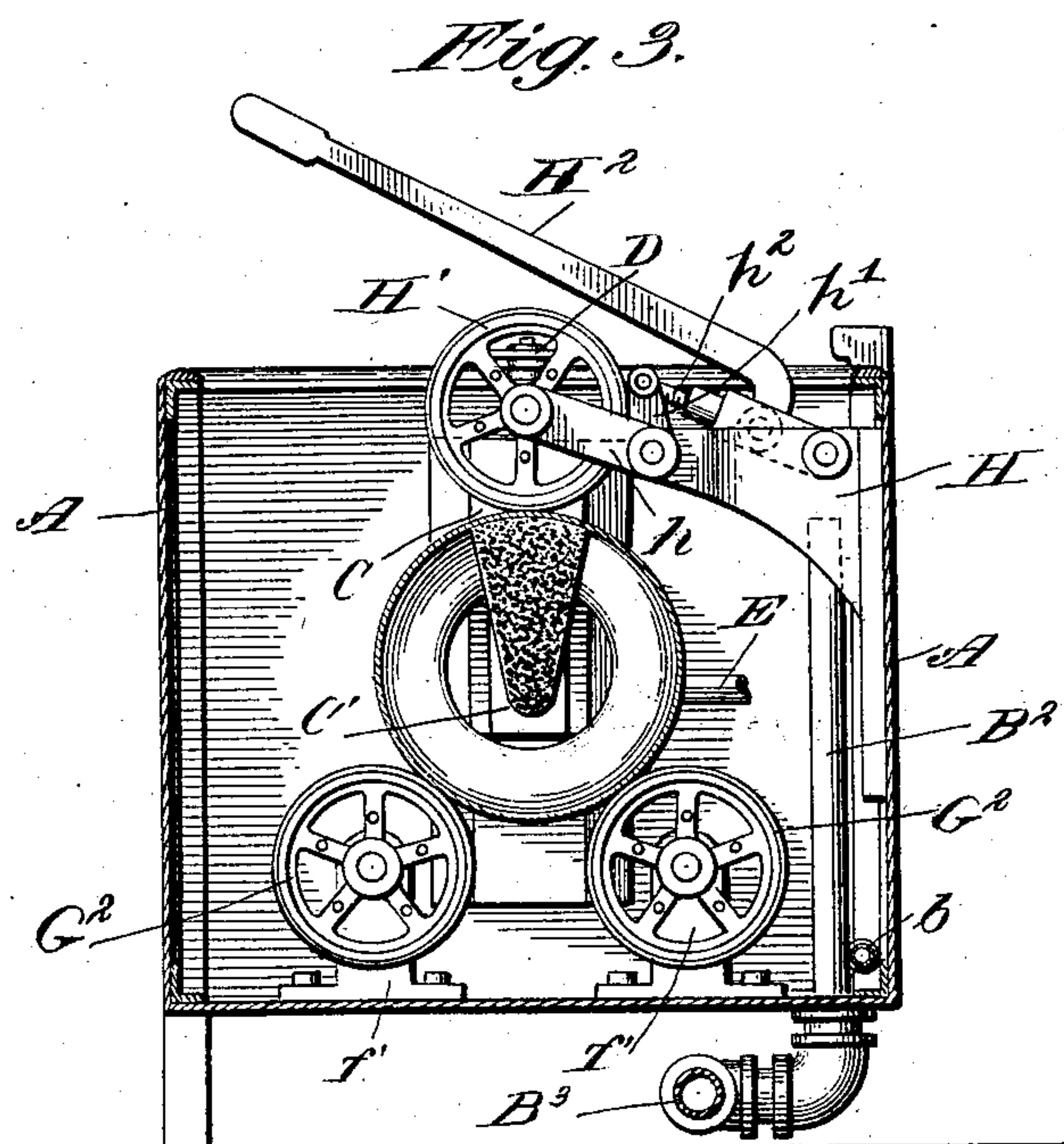
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MACHINE FOR WASHING VESSELS OR RECEPTACLES.

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NO MODEL.

2 SHEETS—SHEET 2.



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# UNITED STATES PATENT OFFICE.

WILLIAM B. PAGE, OF DIXON, ILLINOIS.

## MACHINE FOR WASHING VESSELS OR RECEPTACLES.

SPECIFICATION forming part of Letters Patent No. 754,494, dated March 15, 1904.

Application filed January 21, 1901. Serial No. 44,192. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM B. PAGE, a citizen of the United States, and a resident of Dixon, in the county of Lee and State of Illinois, have invented certain new and useful Improvements in Machines for Washing Vessels or Receptacles; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in machines for washing vessels or receptacles, and more particularly that class of washing-machines designed to wash milk-cans or other cylindric or partly-cylindric receptacles. Heretofore in inventions of this class revolving brushes have been used which were inserted into the receptacles and revolved therein. This, however, has not been satisfactory, inasmuch as it has been difficult for all parts of the can to be reached by the brush, and it is a matter of common experience that if any part of the interior of the can remains unclean it has the effect of tainting the contents, and not only thereby injuring the quality of its contents, but as well seriously endangering the health of the users.

The object of my invention is to obviate the possibility of any part of the can or receptacle remaining unclean.

The invention provides means not only for washing, but also for sterilizing or partly sterilizing the vessel during the washing operation.

The invention consists of the matters hereinafter described, and more fully pointed out and defined in the appended claims.

In the drawings, Figure 1 is a top plan view of a device embodying my invention. Fig. 2 is a vertical section of the same. Fig. 3 is a section taken on line 3 3 of Fig. 2. Figs. 4, 5, and 6 are details of parts of my invention. Fig. 7 is a modified form of the brush.

As shown in the drawings, A indicates a receptacle or tank of any desired form or construction.

B indicates a cold-water-inlet pipe; B', a steam-pipe provided at its lower end near the

bottom of the tank with an apertured pipe *b*, through which steam may be admitted to liquid contained in said tank, with the effect of raising the temperature of said liquid.

B<sup>2</sup> B<sup>2</sup> are overflow-pipes, the open ends of which extend upwardly in the tank to a point lower than the top thereof, as indicated in Fig. 2. Said overflow-pipe connects through the bottom of the tank with the drain-pipe B<sup>3</sup>, which communicates with the sewer or other place of discharge for the waste fluid. The cold-water-inlet pipe B and the steam-pipe B' are each provided with a valve *b'* *b'*, respectively, whereby the inflow of cold water or steam may be under the control of the operator at all times.

C indicates a vertically-movable standard provided with an integral arm which projects inwardly of the tank, as indicated in Figs. 1 and 2, and is provided with a brush removably secured thereon by any well-known means and adapted to extend within the receptacle to be washed when in operation. Said standard C is slidably mounted on one end of said tank, as indicated in Figs. 1 and 5, by means of a plurality of cleats *c c*, arranged oppositely and which engage the flanges *c'* *c'* on each side of the standard. Means are provided for adjusting said standard and brush-arm vertically, comprising a hand-wheel D, secured on a screw-threaded shaft *d*, which passes through an apertured block *d'*, rigidly secured on the front end of the tank. Said shaft has screw-threaded engagement with said standard C, and the rotation thereof acts to move said standard up or down, thereby adjusting vertically the brush-arm. Said brush, as shown, consists of an approximately horizontal portion *c*<sup>2</sup>, convex laterally and conforming longitudinally to the longitudinal contour of a side of the can or receptacle to be washed, including the neck of the receptacle herein indicated, which is shown as a milk-can of familiar form. A downwardly-extending part of said brush *c*<sup>3</sup> is integrally connected with the brush portion *c*<sup>2</sup> and is of a greater length than the radius of a receptacle or vessel to be washed. Obviously the form of the brush may vary with the shape of the receptacle to be washed thereby, and said brushes are removably secured on said



arm C', so that the same may be removed for cleansing or repairs or for the purpose of securing a brush of other form or shape thereon when it is desired to wash receptacles of a different form.

E indicates a pipe or connection for boiling water or superheated steam, which is connected in the brush-arm C' and communicates with a passage extending therethrough, which opens into said tank at a point beneath the brush and within the receptacle when the same is secured in position for cleansing on said brush. e indicates a valve of any desired form connected in said pipe E, whereby the flow of the heated fluid therethrough may be controlled by the operator. Means are provided for rotating a can on said brush, comprising the shafts F F, which extend through the end of the tank on each side of said brush-standard through stuffing-boxes of any desired form to the interior of said tank. Said shafts are parallel, as shown, and provided at their outer ends with sprocket-wheels, over which is trained a sprocket-chain f, which is driven from the shaft F<sup>2</sup>, journaled on the said end of the tank. Said shaft F<sup>2</sup> is provided with tight and loose pulleys in a familiar manner. The inner ends of said shafts F and F are journaled in bearings f' f', rigidly secured on the floor of the tank, as shown in Figs. 1 and 2. Each of said shafts F and F are provided within the tank with friction-rollers G' G' G<sup>2</sup> G<sup>2</sup>, of which the rollers G' G' are each secured intermediate of the bearings of said shafts and the rollers G<sup>2</sup> G<sup>2</sup> secured at the extremities of the shafts beyond the bearings f' f'. The rollers, as shown, are provided on their periphery with a rubber or other resilient tread-surface, which in the drawings is shown as convex transversely.

H H indicate bracket-arms secured on a side of the tank and projecting inwardly and having journaled on the extremities thereof a bell-crank lever. At the extremities of the forwardly-projecting arms h h of said bell-crank lever is journaled a friction-roller H', similar to the rollers G' and G<sup>2</sup> on the shafts F and F and also provided with a resilient tread. Said roller H' is adapted to be swung forwardly and downwardly to engage the periphery of the can or other vessel when supported on the brush and the rollers G' and G<sup>2</sup> by means of the lever H<sup>2</sup>, which is connected with the arm h' of the bell-crank lever by a connecting-rod h<sup>2</sup>, which is pivotally secured at the outer end of said arm. Said connecting-rod h<sup>2</sup> may be secured to said lever H<sup>2</sup> in any desired manner. As shown, however, said lever is a bent lever and is provided intermediate of its ends with an inwardly-projecting fitting pivoted thereon provided with a longitudinal screw-threaded socket, and said connecting-rod is complementally screw-threaded and engages therein. The form of said lever is such that when the friction-roller H' is moved into en-

gagement with the can or receptacle said connecting-rod and the bent end of the lever are in alinement with the fulcrum-pivot of the lever; thereby holding the wheel engaged in position until the lever is moved by an operator:

The operation of my device is as follows: The tank being filled with warm or hot water and the disk H' being elevated to the point indicated by dotted lines in Fig. 2, a can (shown in dotted lines in Fig. 2) is inserted on the brush and supported thereon and on the friction-rollers G' G' G<sup>2</sup> G<sup>2</sup>. The friction-roller H' is then turned down by means of said lever into contact with the outer surface of the can directly above the brush and acts to hold the can thereon. Boiling or hot water is then admitted into the can through the pipe E and rotation given to the can by the lower friction-disks. Inasmuch as the brush conforms to the longitudinal configuration of one side of the can, including the neck thereof, and the parts c<sup>3</sup> of the brush extend transversely beyond the center of the can-bottom the entire inner surface of the can, including its neck, engages the brush during the rotation of the can, and it is obvious that all parts thereof will be thoroughly cleaned. Should the water in said tank at any time become cooler than is desirable, the same may be heated by admitting steam from the pipe B' and the apertured pipe b, and in a similar manner should the water become too warm cold water may be admitted through the pipe B.

As a further improvement the brush may be constructed with the longitudinal portion and end or transverse portion in separate pieces hinged together, as shown in Fig. 7, in which case an arm or bracket c<sup>3</sup> is provided on the longitudinal portion so located as to stop the inward swing of said end portion when a can is placed thereon and hold the brush firmly against the bottom. A spring, herein shown as a spiral pushing-spring, is secured on the bracket-arm and the transverse end portion of the brush and acts to hold said end extended, as shown in dotted lines on Fig. 7, when the can is removed therefrom.

Many details of construction may be varied without departing from the principle of my invention.

I claim as my invention—

1. A machine for washing receptacles comprising a vertically-adjustable brush adapted to extend within the receptacle and to conform to the longitudinal contour of one side thereof and extending partly across the bottom of the same, means for adjusting the brush to the receptacle, means for rotating the receptacle in engagement with said brush and means for injecting heated fluid within said receptacle while rotating against the brush.

2. In a machine of the class described the combination with a vertically-adjustable brush adapted to extend within a receptacle and conform to one side and part of the bottom of the



same, means for rotating the receptacle thereon means for adjusting the rotating means to permit the receptacle to be inserted over the brush into operative position and a valved passage communicating with the interior of said receptacle when in operative position and adapted to admit fluid within the same.

3. In a machine of the class described, a brush formed to fit closely within one side of a receptacle and provided at its end with a part of a length greater than the radius of the receptacle and adapted to engage the end thereof, means for rotating the receptacle when engaged on said brush comprising rotative friction-disks on which said receptacle is supported and a friction-disk adapted to engage the receptacle above the brush and hold the same thereon.

4. In a device of the class described a longitudinally-disposed rigid arm provided with a brush adapted to receive a receptacle inserted over the same, said brush conforming longitudinally with a side of the receptacle and provided with a part on its inner end adapted to engage and extend partly across the bottom of the receptacle, means for vertically adjusting said arm and a plurality of friction-disks adapted to simultaneously engage, support and rotate each receptacle on the brush.

5. In a device of the class described, the combination with a fluid-containing tank of a vertically-movable standard secured thereon, a brush-bearing arm rigidly secured on said standard and extending within said tank, and means for securing a receptacle on said brush and rotate the same in contact therewith.

6. In a device of the class described a vertically-adjustable standard, a longitudinally-disposed arm rigidly secured thereon, a discharge-aperture extending longitudinally therethrough, a brush transversely curved carried upon said arm, and conforming longitudinally with the interior of a receptacle, the

inner end having secured thereon resilient means adapted to engage the bottom of said receptacle and extend beyond the center of the same.

7. As an article of manufacture, a brush transversely curved and adapted to be removably secured upon a rigid arm and conforming longitudinally with the interior of a receptacle, the inner end having secured thereon a brush adapted to engage the bottom of said receptacle and extend beyond the center of the same.

8. The combination with a tank of a plurality of parallel shafts extending through one end of the tank and longitudinally of the same, means at the outer end of said shafts for rotating said shafts in the same direction, friction-disks on said shafts within the tank adapted to rotate a receptacle supported thereon, a movable friction-disk supported from the top of said tank and adapted to be moved downwardly to engage a receptacle when supported on the first-mentioned disks and a brush extending between said friction-disks and adapted to extend within a receptacle when in operative position.

9. A brush for cleaning receptacles comprising an arm a longitudinal part adapted to conform to a side of the receptacle, a resilient terminal part engaged at one end thereof and of a length sufficient to extend more than half across the bottom of the receptacle, and designed normally to press outwardly on the bottom of the receptacle when in operation and a passage-way through said arm adapted to admit water into the receptacle.

In witness whereof I have hereunto subscribed my name in the presence of two subscribing witnesses.

WILLIAM B. PAGE.

Witnesses:

C. W. HILLS,  
LOUIS J. DELSON.