

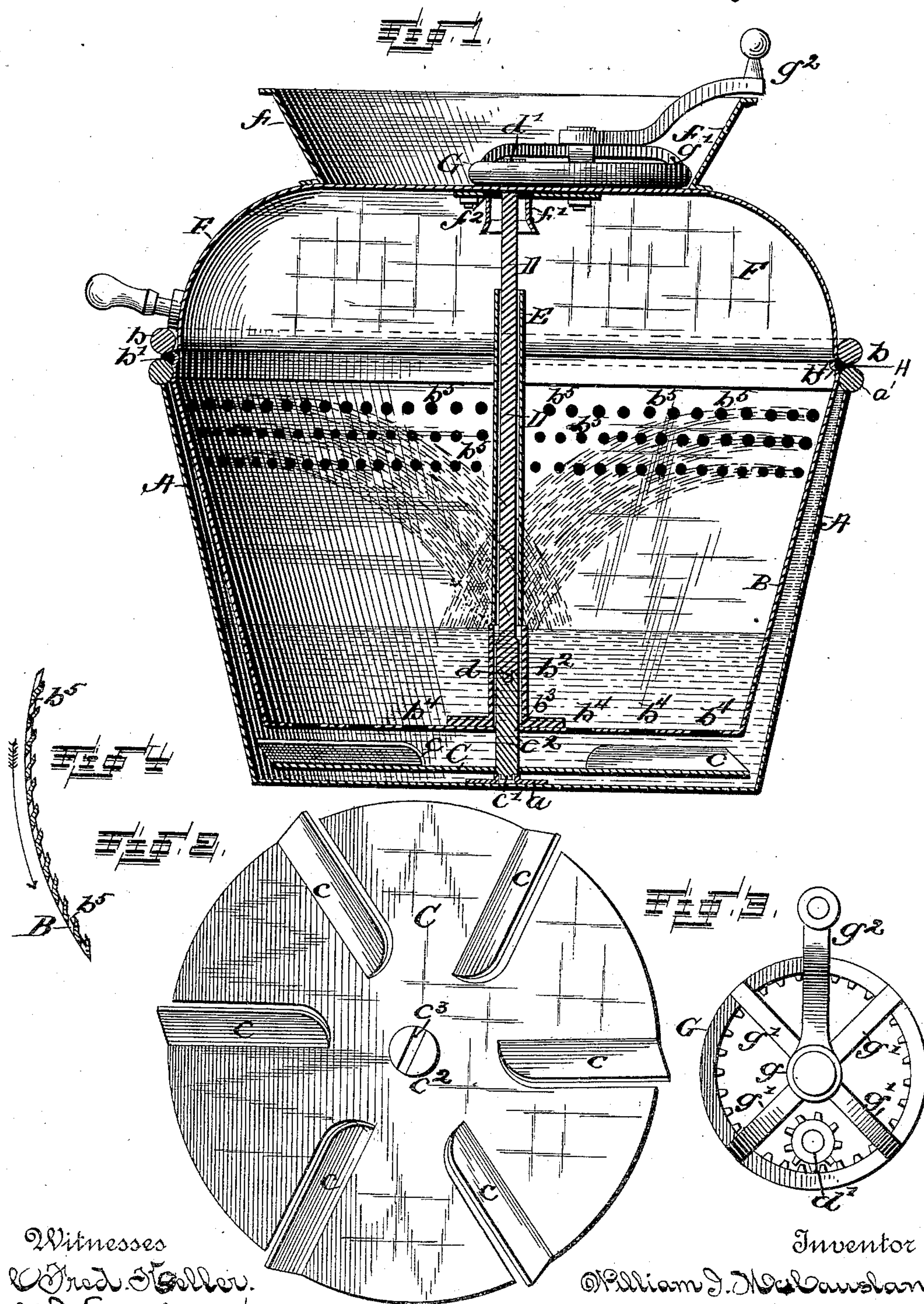
(No Model.)

2 Sheets—Sheet 1.

W. I. McCAUSLAND.
WASHING MACHINE.

No. 427,601.

Patented May 13, 1890.



2 Witnesses
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(No Model.)

2 Sheets—Sheet 2.

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Fig. 6.

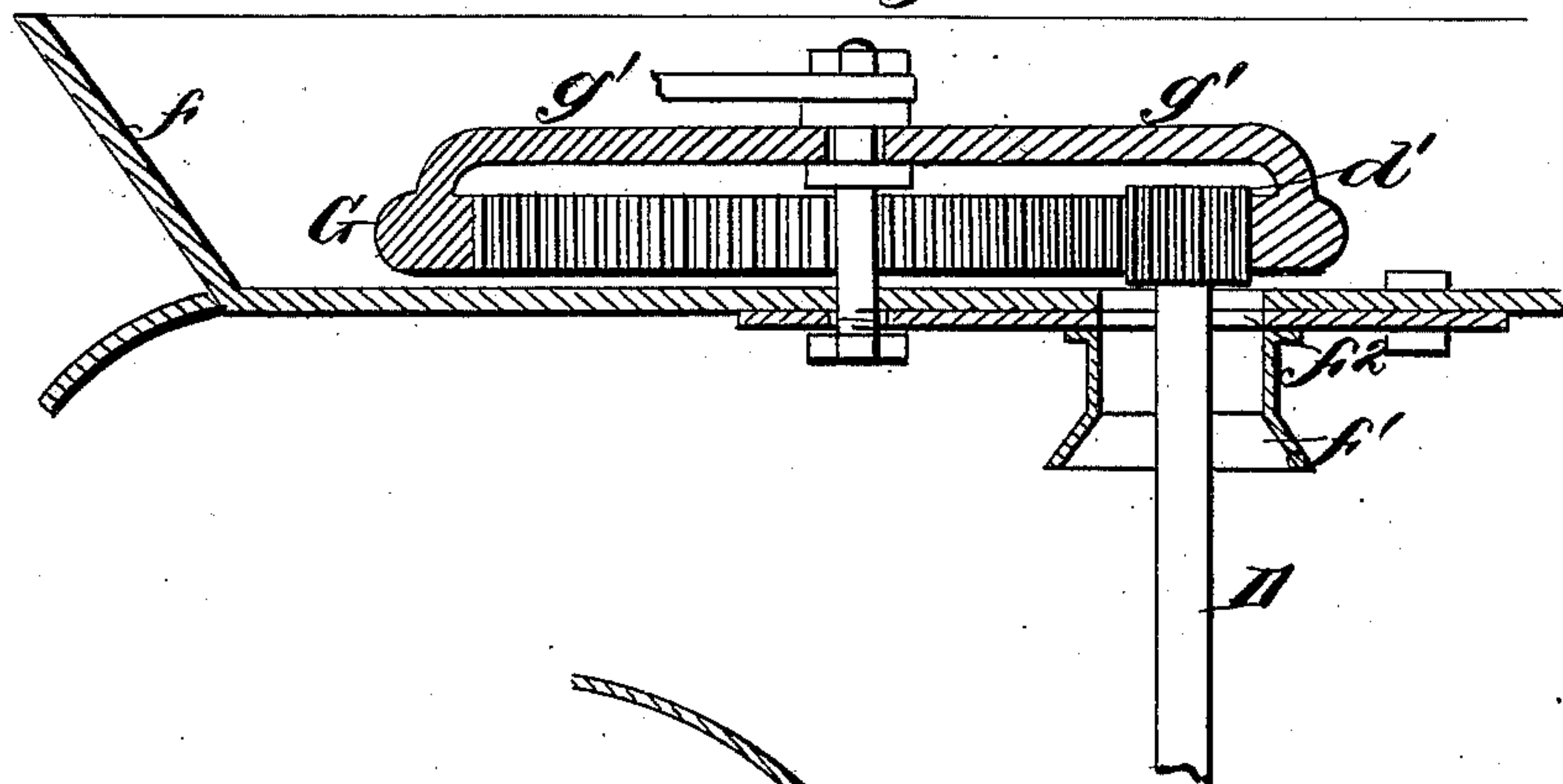


Fig. 5.

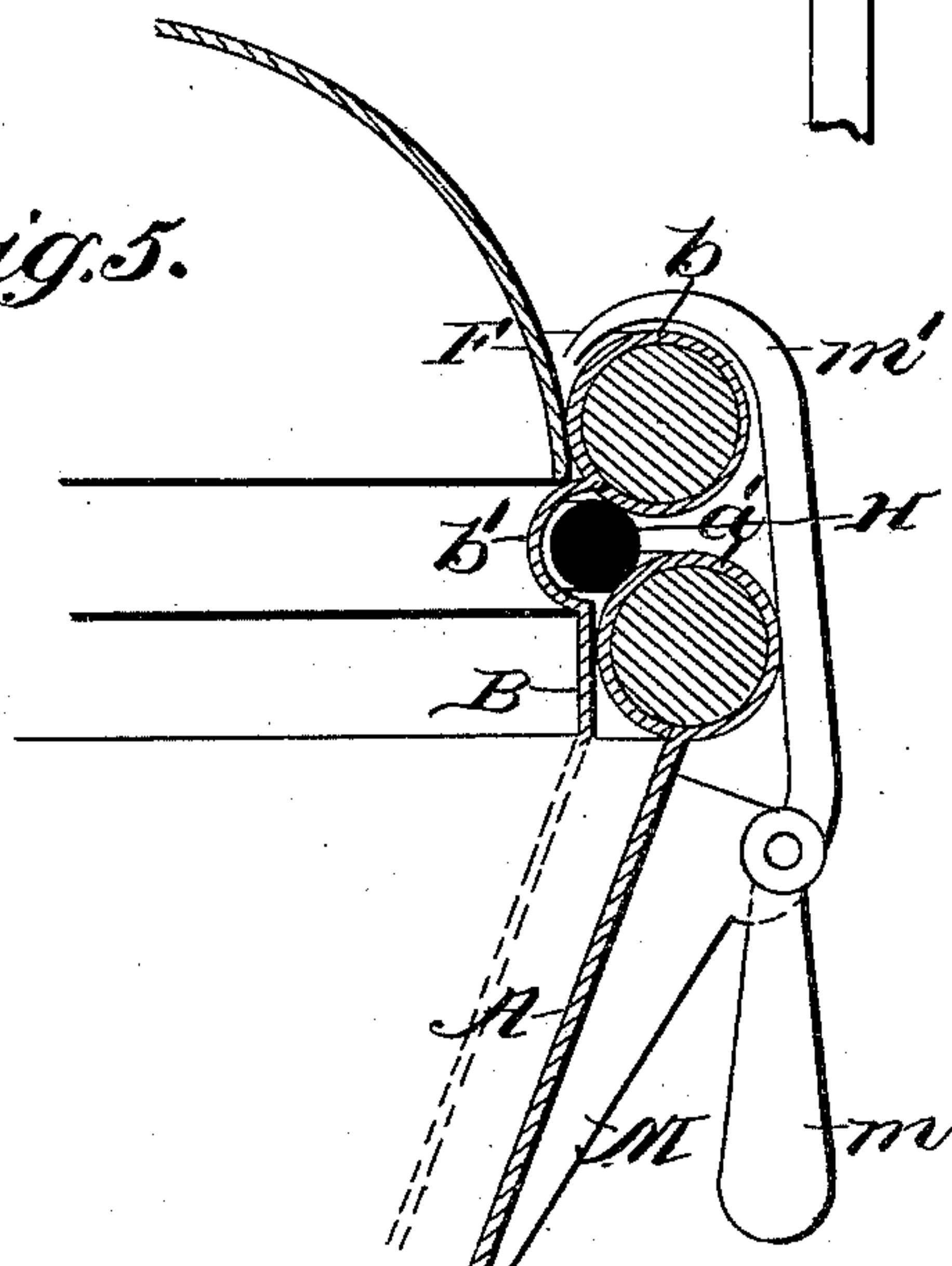
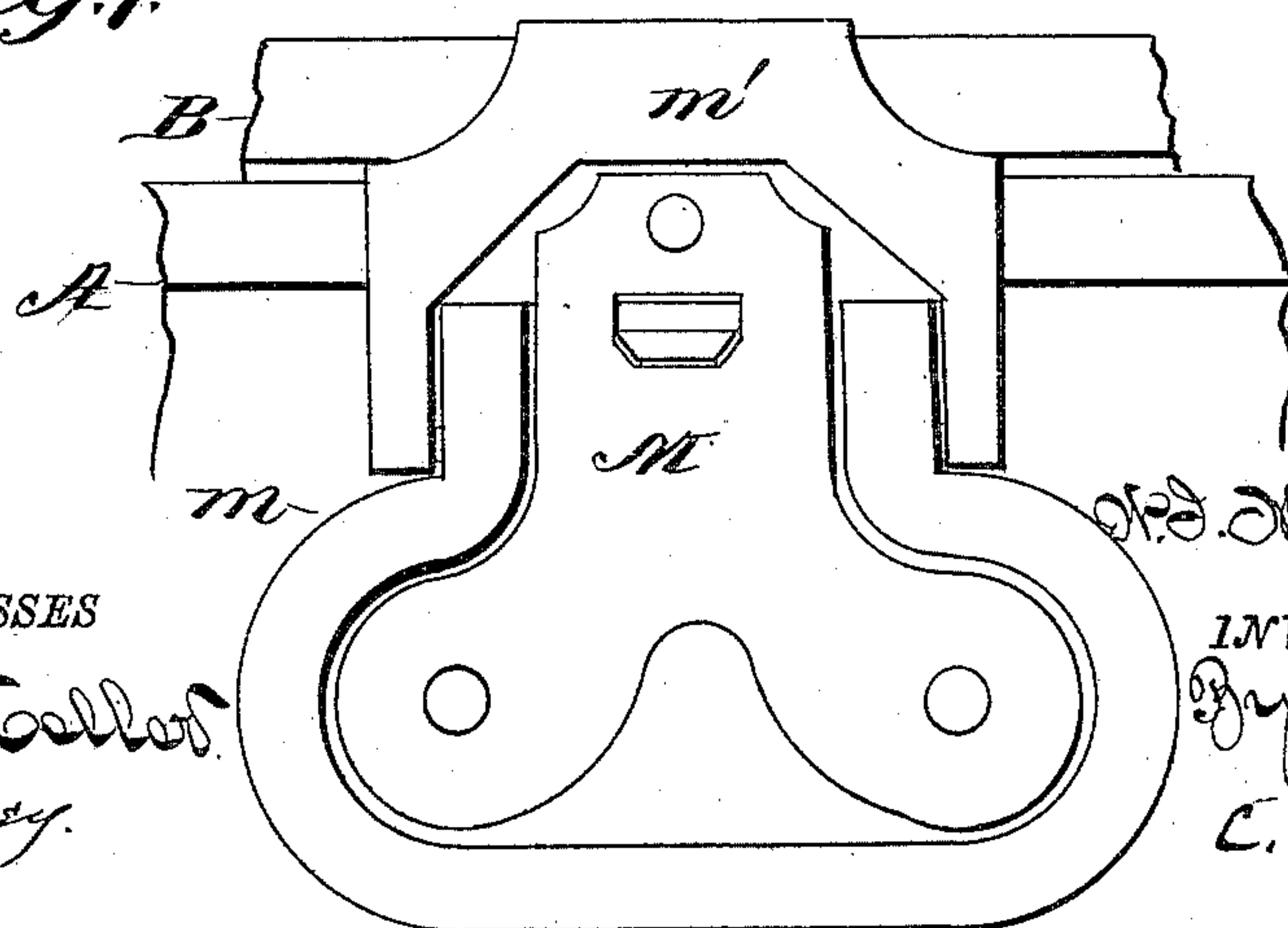


Fig. 7.



WITNESSES

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UNITED STATES PATENT OFFICE.

WILLIAM I. McCAUSLAND, OF TEMPLE, TEXAS.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 427,601, dated May 13, 1890.

Application filed February 10, 1888. Serial No. 263,616. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM I. McCAUSLAND, a citizen of the United States, residing at Temple, in the county of Bell and State of Texas, have invented certain new and useful Improvements in Washing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has for its object to provide a new and simplified construction in washing-machines, and relates to the same class thereof as the apparatus described in Letters Patent of the United States No. 377,765, granted to me on the 14th day of February, 1888; and it consists, particularly, in improvements in the water-wheel and in the mechanism for imparting motion thereto, whereby the washing-liquid is made to flow upward between the sides of an outer and inner pan and downward upon the articles to be washed, which are inclosed in the said inner pan, as will be now described and claimed, and is adapted to wash any articles that may be placed within the said inner pan.

Referring to the accompanying drawings, in which corresponding parts are designated by similar letters, Figure 1 is a vertical central section of my invention. Fig. 2 is a detail view of the water-wheel. Fig. 3 is a detail view of the multiplying gear for imparting motion to the central shaft. Fig. 4 illustrates a portion of the inner pan, showing the perforations therein. Fig. 5 is a detail sectional view of the flange upon the two pans and of the lower edge of the cover. Fig. 6 is a detail vertical section through the top of the machine or cover F, and Fig. 7 is a detail view of the clamping device.

The outer pan A, preferably of the form of a frustum of a cone, though other shapes and forms may be employed, has a socket *a* in the center of the bottom thereof, while an annular rim *a'* is formed upon the upper edge of its sides.

The inner pan B is of such a size and shape as to form an annular chamber between its sides and those of the outer pan A and an inclosed chamber between its bottom and that of the said outer pan, and is provided with an annular flange *b* surrounding the up-

per edge of the sides thereof, while an annular channel *b'* also surrounds the circumference of its sides immediately below the said flange, which projects over the corresponding flange upon the pan A, thus affording a support for the inner pan. A cylindrical projection *b²* is formed or fastened upon the bottom of the inside pan, and in the center thereof, the central bore of the said projection forming an extension of the perforation *b³* in the bottom of the said pan, and the bottom of the pan is provided with perforations *b⁴* to permit the escape of water into the outer pan.

Perforations *b⁵* are formed obliquely in the sides of the inner pan B, and preferably have an inclination of about sixty degrees to the radius of the circle in which the water revolves, so that when the water escapes through these holes it will flow back at an acute angle to the direction in which it had been rotating if it were not for its momentum, which carries it to the center of the pan. The inclination of these holes is shown in Fig. 4, in which the direction in which the water revolves is indicated by an arrow.

A water-wheel C, which is of a circular form and is formed of a single flat piece, has portions thereof turned up, as shown in Fig. 2, forming inclined blades *c c c c c c*, and is mounted upon a short vertical spindle or shaft *c²*, the lower end of which is provided with a bearing *c'*, resting in the socket *a* upon the bottom of the outer pan, the upper end of the said spindle being provided with a groove *c³*, which receives the projection *d* on the lower end of the central shaft D. The shaft D has upon its lower end a lug or projection *d*, which fits into and engages the corresponding groove *c³* upon the projection of the water-wheel, while its upper end is provided with a gear-wheel *d'*, which may either be made integral therewith or removable therefrom. A tube or pipe E fits loosely upon the shaft D and revolves thereon.

The cover F has upon its top a casing *f*, and has formed upon its under surface a cylindrical extension *f'* of the perforation *f²*, which is in the center of the said cover. This extension is preferably constructed with a flared mouth, in order to receive the gear-wheel *d'* upon the shaft D and guide it through the said perforation *f'*.

An internal geared wheel G, connected with its hub *g* by spiders *g' g' g' g'*, is pivoted within the casing *f*, which prevents clothing, &c., from being seized hold of by the wheel.

5 The said wheel G is so pivoted within the casing that its teeth will gear with the teeth of the wheel *d'*, which projects through the cylindrical extension *f'* and perforation *f²* into the casing *f*. The wheel G is provided with
10 a handle *g²*, projecting above the level of the said casing, or the said wheel may be connected in any proper manner with a suitable source of power.

At suitable distances upon the outside of
15 the pan A are placed projections M. The ends of the handles *m* are pivotally attached thereto, and are also pivotally attached to the claws *m'*. The said claws engage the annular flange *b* of the pan B, and when by the
20 downward movement of the handles *m* they are drawn downward they press the flange *b* upon the flange *a'* and compress the gasket H, of rubber or other suitable material, which is placed within the annular channel *b'* of the
25 inner pan, thereby forming a water-tight joint at the top of the space between the pans A and B.

When it is desired to use my apparatus, the articles to be washed are placed in the inner
30 pan, the washing-liquid is poured therein, whence it escapes into the outer pan through the perforations *b⁴*, and the lower end of the shaft D is then placed in the cylindrical projection *b²* of the inner pan, the lug *d* being
35 received by the groove *c³* on the projection formed upon the water-wheel. The cover F is now placed in position, the flaring mouth of the annular extension *f'* receiving the gear-wheel *d'* upon the shaft and guiding it to the
40 perforation *f²* in the cover, through which it passes to gear with the wheel G. Motion is now imparted to this wheel, from which it is communicated to the water-wheel C by means of the gear-wheel *d'* and shaft D. By the revolution
45 of the inclined blades *c*, forming part of the said water-wheel, the washing-liquid is given a centrifugal motion, and, striking the sides of the outer pan A, is forced upward and around the inner pan. This upward motion
50 is also assisted by the inclination of the blades of the water-wheel. The water being

unable to escape between the tops of the two pans, flows through the perforations *b⁵* in the sides of the said inner pan down upon the articles to be washed, whence it escapes through
55 the perforations *b⁴* in the bottom thereof into the outer pan and again follows the same course. The pipe E prevents the shaft D from seizing hold of any fibrous or other material that may be placed within the inner
60 pan, and thus the stopping or breaking of the machine from that cause. The cover F prevents any liquid from being splashed out of the pan, as would otherwise be the case. When the washing is completed, the cover is re-
65 moved and the shaft D lifted out of the cylindrical projection *b²*, and the articles which have been washed are removed.

Having now described my invention, what I claim, and desire to secure by Letters Patent
70 of the United States, is—

1. In a washing-machine, the combination of the outer pan, an inner pan of less height and diameter suspended therein, whereby a space is provided between the bottoms and
75 sides of the said pans, perforations in the said inner pan inclined at an angle to the radius of the circle in which the water revolves, a water-wheel having flat straight radial blades upon its upper side inclined at an angle to its
80 plane of revolution, revolving between the bottoms of the said pans, and a shaft provided with an inclosing pipe or tube passing through the center of the said inner pan and adapted to impart motion to the said wheel, as and for
85 the purpose described.

2. A water-wheel for giving water an upward and rotary motion, having flat straight radial blades upon its upper side inclined at an angle with the plane of rotation of the said
90 wheel, as and for the purpose described.

3. The combination, with the water-wheel C, mounted upon a shaft, of the shaft D, the lower end of which engages the said water-wheel, and an inclosing-pipe surrounding the
95 shaft D, as and for the purpose described.

In testimony whereof I have affixed my signature in presence of two witnesses.

WILLIAM I. MCCAUSLAND.

Witnesses:

F. F. DOWNS,
F. E. SANFORD.